DEPARTMENT OF HEALTH & HUMAN SERVICES
Centers for Medicare & Medicaid Services
7500 Security Boulevard, Mail Stop S2-25-26
Baltimore, Maryland 21244-1850

State Demonstrations Group

April 06, 2026

Adela Flores-Brennan
Medicaid Director
Colorado Department of Health Care Policy and Financing
1570 Grant Street
Denver, CO 80203

Dear Director Flores-Brennan:

The Centers for Medicare & Medicaid Services (CMS) completed its review of the Substance Use Disorder (SUD) Interim Evaluation Report, which is required by the Special Terms and Conditions (STCs), specifically STC #12.7 "Interim Evaluation Report" of Colorado's section 1115 demonstration, "Colorado Expanding the Substance User Disorder Continuum of Care" (Project No: 11-W-00336/8 and 21-W-00079/8), effective through June 30, 2026. This Interim Evaluation Report covers the period from January 2021 through December 2023. CMS determined that the Evaluation Report, submitted on December 23, 2024 and revised on January 16, 2026, is in alignment with the CMS-approved Evaluation Design and the requirements set forth in the STCs, and therefore, approves the state's SUD Interim Evaluation Report.

The Interim Evaluation Report uses a mixed-methods approach, including an interrupted time series (ITS) quasi-experimental design to assess outcomes where applicable, and feedback from focus groups, with results showing a mix of outcomes associated with the demonstration. Positive findings from the pre-demonstration period (January 1, 2020 to December 31, 2020) to calendar year (CY) 2023 include an 18.1% increase in treatment initiation, a 23.6% decrease in concurrent opioid–benzodiazepine use, an 11.1% decrease in the number of opioids prescriptions dispensed (excluding buprenorphine), and a 25% decrease in opioid-related deaths. While findings also indicate gains from the pre-demonstration period to CY 2023 in certain aspects of continuity of care, such as a 36% increase in 30-day follow-up after emergency department visits, there was also a 6.5% decrease in treatment engagement and an 11.2% increase in readmissions over the same period, along with an overall increasing trend in emergency department and inpatient utilization through June 2023. Limitations of the evaluation include data constraints, including a short pre-demonstration measurement period and the inability to identify a comparison group to determine causality. The state noted that in the summative evaluation, it will seek national and other state data for benchmarking to assess whether its performance aligns with other demonstration states, non-demonstration states, and national trends. We look forward to further analysis as the demonstration progresses.

In accordance with STC #12.11, the approved Interim Evaluation Report may now be posted to the state's Medicaid website within 30 days. CMS will also post the Interim Evaluation Report on Medicaid.gov.

States are responsible for following all applicable federal law and regulations when they claim and use federal Medicaid and CHIP funds and must fully comply with all applicable Medicaid and CHIP statutes and regulations under a section 1115 demonstration, except where specific provisions have been expressly waived or identified as not applicable for that demonstration. This obligation includes all requirements in Title XIX and Title XXI of the Social Security Act and implementing regulations governing provider screening and enrollment activities, pre- and post-payment review claiming, payment methodologies and rate-setting, utilization controls, and program integrity including processes to identify, investigate, and refer suspected fraud, and methods to receive complaints and identify questionable practices. States must maintain effective systems and safeguards to prevent, detect, and address any fraud, waste, or abuse (FWA) in the delivery of and payment for Medicaid and CHIP services, including referrals to law enforcement when appropriate.

States should have heightened monitoring and oversight mechanisms in place featuring robust internal controls to identify and remediate all vulnerabilities (including, but not limited to, FWA and beneficiary access issues) inherent in service areas approved as part of a demonstration. At any time, CMS may request that the state provide a plan detailing the state's systems and safeguards to prevent, detect, and address any FWA relative to this demonstration. Failure to meet program integrity obligations under federal statutes and regulations or under the terms and conditions of this demonstration approval may result in compliance actions or other enforcement measures that could include requirements to develop and implement corrective action plans, withholdings, deferrals, disallowances, and termination of demonstration authority.

We look forward to our continued partnership on the Colorado Expanding the Substance Use Disorder Continuum of Care section 1115 demonstration. If you have any questions, please contact your CMS demonstration team.

Sincerely,

DANIELLE DALY -S

Digitally signed by DANIELLE DALY -S
Date: 2026.04.06 11:38:10 -04'00'

Danielle Daly
Director
Division of Demonstration Monitoring and Evaluation

cc: Ronna Bach, State Monitoring Lead, CMS Medicaid and CHIP Operations Group

Mercer

Government Human Services Consulting

Substance Use Disorder 1115 Demonstration

Interim Evaluation

State of Colorado
December 23, 2024

Contents

Section 1
Executive Summary

The State of Colorado (Colorado or State) Demonstration has authority for the coverage of high quality, medically necessary treatment for opioid use disorder (OUD) and other substance use disorders (SUDs). This interim evaluation report includes findings from the first 2.5 years of the demonstration: January 1, 2021 through June 30, 2023, with annual metrics through December 31, 2023. Qualitative findings extend an additional year, through June of 2024.

History and Overview of the Demonstration

Colorado's section 1115 waiver application was prompted by growing impacts of the national opioid epidemic and an increase in the rate of SUD diagnosis. The State data provided in the initial application to the Centers for Medicare & Medicaid Services (CMS) underscored that Colorado Medicaid members are particularly affected by SUDs, impacting the health outcomes and costs of this population:

- An estimated 11% of Medicaid members have an SUD diagnosis.[1]
- Twenty-nine percent of those who die from an overdose in Colorado are Medicaid members.
- The most prevalent substances abused among Medicaid members are alcohol and methamphetamine.[2]
- Though 11% of the Medicaid population, the cost of care for members with a SUD diagnosis accounts for nearly 19% of the total cost of care to the system.
- On average, the annual cost of care for a Medicaid member with an SUD diagnosis is nearly double the cost for one without ($10,445 versus $5,646).
- Members with a SUD diagnosis account for 20% of the State's non-SUD related pharmacy spending.[3]

Additionally, according to the 2017 Colorado Health Access Survey (CHAS), despite the State's efforts to date, Colorado continued to have an unmet need for SUD treatment.[4] The survey showed that more than 67,000 Coloradans need some type of treatment for drug or alcohol use but do not receive it.

Colorado's Demonstration

Colorado began implementation of the SUD Demonstration on January 1, 2021, and has completed or begun (some activities will be ongoing throughout the Demonstration period) all activities outlined in its CMS-approved original implementation plan. The State continues to work

[1] Russell S. "Colorado Drug Trends." Drug/Alcohol Coordinated Data System (DACODS), Colorado Department of Human Services Office of Behavioral Health. 2018.

[2] Colorado Health Institute. Exploring Options for Residential and Inpatient Treatment of Substance Use Disorder in Health First Colorado. November 2017. Available at: https://www.colorado.gov/pacific/sites/default/files/HCPF%202017%20Inpatient%20SUD%20Treatment%20Report.pdf

[3] Colorado Substance Use Disorder Data Fiscal Year 2017-2018. Colorado Department of Health Care Policy & Financing, Pharmacy and Behavioral Health Data Division. 2019.

[4] Colorado Health Institute. 2017 Colorado Health Access Survey: The New Normal Available at: https://www.coloradohealthinstitute.org/research/colorado-health-access-survey-2017

on minor improvements to the implementation strategies, as detailed in annual and quarterly monitoring reports, but has not made any significant changes to Demonstration operations.

The Demonstration intends to accomplish the following aims:

- Promote increased access to care for members with SUD.
- Improve the quality of care for members with SUD.
- Improve outcomes for members using SUD services and maintain costs.

These State aims align with the Demonstration's primary drivers which are the six federal

SUD goals:

- Increased rates of identification, initiation, and engagement in treatment.
- Increased adherence to and retention in treatment.
- Reductions in overdose deaths, particularly those due to opioids.
- Reduced utilization of emergency departments (EDs) and inpatient hospital settings for treatment where the utilization is preventable or medically inappropriate through improved access to other continuum of care services.
- Fewer readmissions to the same or higher level of care where the readmission is preventable or medically inappropriate.
- Improved access to care for physical health conditions among beneficiaries. Demonstration activities fall into four specific categories:
- Access to the entire range of OUD and SUD treatment levels of care.
- Capacity assessment for expanded inpatient and residential services.
- Workforce development and training.
- Other implementation planning activities, including stakeholder engagement and provider and managed care entities (MCE) training opportunities.

Evaluation Conclusions

The State completed significant activities to ensure that new levels of care were implemented, including: rate methodologies, contract amendments, billing system changes, and billing rules. The State also implemented changes to regulatory oversight including licensing of facilities to align with the American Society of Addiction Medicine (ASAM) criteria. However, as shown in the data, the effects of these implementation activities on individual levels of care were mixed.

Many, but not all, of the evaluation hypotheses were at least partially supported by this analysis. Most notably, there were general increases in the number of members receiving OUD and SUD services across many levels of care.

Findings are consistent with a Demonstration that is in the middle of implementation. Providers reported that use of ASAM placement criteria has been completed and adopted by both providers and MCEs. However, there are some inconsistencies across regional accountable entities (MCEs) that lead to challenges for providers and, sometimes, barriers to access for Medicaid members due to the inconsistency of the day-to-day implementation across MCEs. More training for the MCEs, particularly staff responsible for prior authorizations, on specific features of each ASAM level of care would improve access to care for Medicaid members.

The first two years of the Demonstration saw only a modest increase in the number of available providers, meaning that capacity may remain a barrier to access. While there was an initial increase in the number of providers during the first Demonstration Year (DY), that number fell in the second year, nearly to the baseline level.

While significant progress has been made regarding planned activities around improving care coordination across the State, these efforts have not yet translated into results as reported by Demonstration stakeholders or as seen in the quantitative data around access to physical healthcare. In addition to the modest increases in access to preventive/ambulatory health services for adult Medicaid members with SUD, the State continues to experience large and growing readmission rates, decreasing engagement statistics, and a disproportionate percentage of the population receiving withdrawal management (WM) services relative to sustained SUD treatment.

Demonstration progress and implementation advances from some short-term outcomes have not completely translated into long-term progress in lowering readmission rates. While the Demonstration intended to reduce readmissions, the rate increased between baseline and the second DY. This may reflect the need to continue to improve access to care across all critical levels of care, improve retention in care, improve follow-up after hospitalizations and ED use, and for all populations, as well as the ongoing, but incomplete, work to improve care coordination and treatment level transitions.

Evaluation Recommendations

Based on the capacity issues facing the program, Mercer Government Human Services Consulting (Mercer), part of Mercer Health & Benefits LLC, recommends that Colorado reconvene the Provider Capacity Workgroup to analyze wait lists and “service deserts” to ensure there is adequate access to care.

Because the growth in medication assisted treatment (MAT) providers has not translated into more MAT services, Mercer recommends that Colorado work with providers to improve the MAT penetration rates for members with SUD including improving follow-up after WM where MAT is inducted.

Mercer recommends that Colorado consider implementing the recommendations articulated in the 2022 “Bridging the Gaps: Policy Recommendations to Implement a Cohesive Statewide Care Coordination Infrastructure” report including definitions for care coordination services, supporting care coordination infrastructure, care transitions, standards of care, credentials for providing care coordination services, and payment and accountability models.

Mercer recommends that Colorado report findings with the Independent Evaluator from ongoing reviews of residential treatment providers to assess alignment with ASAM criteria.

Mercer recommends that Colorado consider requiring MCEs to have a performance improvement projects improving care coordination and transitions of care following ED usage, hospitalization, and WM to improve retention in care, access to primary care, and decreasing readmission rates.

Mercer recommends that Colorado implement intensive training with Level 3.2WM providers on discharge planning and adherence to ASAM principles and monitor these providers to ensure that warm hand-offs occur with lower and higher levels of care to improve MAT continuity and retention in care. A significant redesign of this level of care appears to be needed to adopt the goals of the Demonstration and lead to the recovery of individuals with SUD in Colorado.

Section 2
General Background Information

History and Overview

Colorado's section 1115 waiver application was prompted by growing impacts of the national opioid epidemic and an increase in the rate of SUD diagnosis. Data collected by the Colorado Department of Public Health and Environment between 1999–2017 showed:

- An estimated half a million Coloradans are dependent on alcohol or have used illicit drugs. Nearly 30% (142,000) are Medicaid members.[5]
- Between 2000–2017, 12,821 Coloradans died due to a drug overdose.
- The number of overdose deaths has increased from 7.8 deaths per 100,000 in 2000 to 17.6 deaths per 100,000 in 2017.
- Opioid use is leading the overdose epidemic, accounting for over half of the overdose deaths between 2013–2017, two-thirds of which are attributable to prescription opioids.[6]

The State data underscored that Colorado Medicaid members are particularly affected by SUDs, impacting the health outcomes and costs of this population:

- An estimated 11% of Medicaid members have an SUD diagnosis.[7]
- Twenty-nine percent of those who die from an overdose in Colorado are Medicaid members.
- The most prevalent substances abused among Medicaid members are alcohol and methamphetamine.[8]
- Though 11% of the Medicaid population, the cost of care for members with a SUD diagnosis accounts for nearly 19% of the total cost of care to the system.
- On average, the annual cost of care for a Medicaid member with an SUD diagnosis is nearly double the cost for one without ($10,445 versus $5,646).
- Members with an SUD diagnosis account for 20% of the State's non-SUD related pharmacy spending.[9]

[5] Colorado Health Institute. Exploring Options for Residential and Inpatient Treatment of Substance Use Disorder in Health First Colorado. November 2017. Available at: https://www.colorado.gov/pacific/sites/default/files/HCPF%202017%20Inpatient%20SUD%20Treatment%20Report.pdf

[6] Bol K. Colorado Department of Public Health and Environment. Drug Overdose Deaths in Colorado. Final Data. 1999-2017. December 2018.

[7] Russell S. "Colorado Drug Trends." Drug/Alcohol Coordinated Data System (DACODS), Colorado Department of Human Services Office of Behavioral Health. 2018.

[8] Colorado Health Institute. Exploring Options for Residential and Inpatient Treatment of Substance Use Disorder in Health First Colorado. November 2017. Available at: https://www.colorado.gov/pacific/sites/default/files/HCPF%202017%20Inpatient%20SUD%20Treatment%20Report.pdf

[9] Colorado Substance Use Disorder Data Fiscal Year 2017-2018. Colorado Department of Health Care Policy & Financing, Pharmacy and Behavioral Health Data Division. 2019.

Additionally, according to the 2017 CHAS, despite the State's efforts to date, Colorado continued to have an unmet need for SUD treatment.[10] The survey showed that more than 67,000 Coloradans need some type of treatment for drug or alcohol use but do not receive it.

As described in the waiver application[11], Colorado saw a clear need for more access to services.

Demonstration Approval

On November 13, 2020, Colorado received approval for its application for a Section 1115(a) Demonstration titled "Expanding the Substance Use Disorder Continuum of Care" (Project Number 11-W-00336/8) effective January 1, 2021 through December 31, 2025.

Interim Evaluation Period

This interim evaluation is being submitted as part of Colorado's waiver extension request to CMS. Demonstration data for the interim evaluation report includes pre-Demonstration data from 2020[12] and data from the Demonstration period of January 1, 2021 through June 30, 2023, with annual metrics through December 31, 2023. Qualitative data is also included from July 1, 2023 through June 30, 2024.

Description of the Demonstration

Colorado began implementation of the waiver on January 1, 2021, and has completed or begun (some activities will be ongoing throughout the Demonstration period) all activities outlined in its original implementation plan. The State continues to work on minor improvements to the implementation strategies, as detailed in annual and quarterly monitoring reports, but has not made any significant changes to the Demonstration. The only significant change to the Demonstration was a technical amendment to Budget Neutrality calculations during the second year of the waiver to correct an omission of fee-for-service data in the initial calculations. That correction does not affect any aspect of the operations of the Demonstration, solely the CMS without waiver benchmarks to which Colorado will be held for the first Demonstration period.

The original waiver purpose, in addition to the six federal goals, was to provide access to residential and inpatient treatment settings, expand the availability of WM services, and increase access to MAT for members with SUD or alcohol use disorder. These changes were designed to ensure that the most appropriate levels of care are available for patients and improve treatment outcomes.

Colorado added ASAM levels 3.1 (Clinically Managed Low-intensity Residential Services), 3.3 (Clinically Managed Population-specific High-intensity Residential Services), 3.5 (Clinically Managed High-intensity Residential Services) and 3.7 (Medically Monitored Intensive Inpatient Services), and 3.7WM (Medically Managed Inpatient Withdrawal Management) as Medicaid-covered services.

The Demonstration intends to accomplish the following aims:

- Promote increased access to care for members with SUD.

[10] Colorado Health Institute. 2017 Colorado Health Access Survey: The New Normal. Available at: https://www.coloradohealthinstitute.org/research/colorado-health- access-survey-2017

[11] A more detailed description of the waiver background is included in the approved Evaluation Design document, included as Appendix A to this document.

[12] The selection of 2020 data for the pre-Demonstration period is discussed in the Methodology section of this document

- Improve the quality of care for members with SUD.
- Improve outcomes for members using SUD services and maintain costs.

These State goals align with the Demonstration's primary drivers which are the six federal SUD goals:

- Increased rates of identification, initiation, and engagement in treatment.
- Increased adherence to and retention in treatment.
- Reductions in overdose deaths, particularly those due to opioids.
- Reduced utilization of EDs and inpatient hospital settings for treatment where the utilization is preventable or medically inappropriate through improved access to other continuum of care services.
- Fewer readmissions to the same or higher level of care where the readmission is preventable or medically inappropriate.
- Improved access to care for physical health conditions among beneficiaries.

Capacity Assessment for Expanded Inpatient and Residential Services

To implement the new SUD benefit, the State has worked to assess and expand Colorado's existing network of inpatient and residential SUD services, managed by MCEs prior to the Demonstration implementation.

The State has been collecting information about availability of inpatient and residential bed capacity, including engaging with a contractor to conduct a provider assessment throughout the State. This assessment was completed in Demonstration Year One (DY1) and was used to explore how to expand provider capacity in the State. In addition, the Demonstration conducts ongoing network adequacy surveys of the MCEs across all levels of care.

Workforce Development and Training

The State developed a plan and materials to train all providers and MCEs working within the continuum of care on utilization management and ASAM-based assessment to ensure that the continuum of care is applied appropriately and to reduce the under- and/or over-utilization of any of the levels of care. The Department continues to engage providers and MCEs with training and technical assistance activities that include:

- Ensuring appropriate licensure levels of all sites in the system.
- Defining and training providers on treatment terms to ensure consistency.
- Training providers on evidence-based practices for member assessment and placement.
- Addressing provider shortages, specifically in rural areas.
- Recruiting providers not currently enrolled as Medicaid providers.

Other Implementation Planning Activities

As reported in quarterly and annual monitoring reports, the State continues to engage in activities to support successful waiver implementation. The State conducted a series of robust stakeholder engagement sessions dating back to October 2018, culminating in the formal public notice and comment process required for the waiver application, as well as through the life of the Demonstration through post award forums, and the public forums for the extension request. As needed, the Department has made changes to State regulations, provider standards and billing

rates and procedures, provider communication, engagement, and training, as well as MCE contract and payment rate changes.

Population Impacted

There are no changes to the Medicaid eligibility criteria included as part of this waiver. The Demonstration is open to all Medicaid members with a covered SUD diagnosis. The Demonstration has no enrollment limits.

Section 3
Evaluation Questions and Hypotheses

Evaluation questions and hypotheses to be addressed were derived from and organized based on the Driver Diagrams below. The overall aims of the project are to: 1) Promote increased access to care for members with SUD; 2) Improve the quality of care for members with SUD; and 3) Improve outcomes for members using SUD services and maintain costs. To evaluated progress on these aims, the Demonstration evaluation is organized by the primary drivers of change, which are the six federal goals of the demonstration.

- Increased rates of identification, initiation, and engagement in treatment.
- Improved access to physical healthcare.
- Increased adherence to and retention in treatment.
- Reduction in overdose deaths.
- Fewer readmissions to the same or higher level of care.
- Reduced ED and hospital admissions for SUD or OUD.

The specific evaluation questions to be addressed were selected based on the following criteria:

- Potential for improvement, consistent with the key milestones of the Demonstration listed above.
- Potential for measurement, including (where possible and relevant) baseline measures that can help to isolate the effects of the Demonstration initiatives and activities over time.
- Potential to coordinate with ongoing performance evaluation and monitoring efforts.

Research questions were selected to address the Demonstration's major program goals, to be accomplished by Demonstration activities associated with each of the primary drivers. Specific hypotheses regarding the Demonstration's impact are posed for each of these evaluation questions. These are linked to the primary drivers in the diagrams and tables beginning in Section 2 "Driver Diagrams, Research Questions and Hypotheses," directly following the next Section "Targets for Improvement".

Targets for Improvement

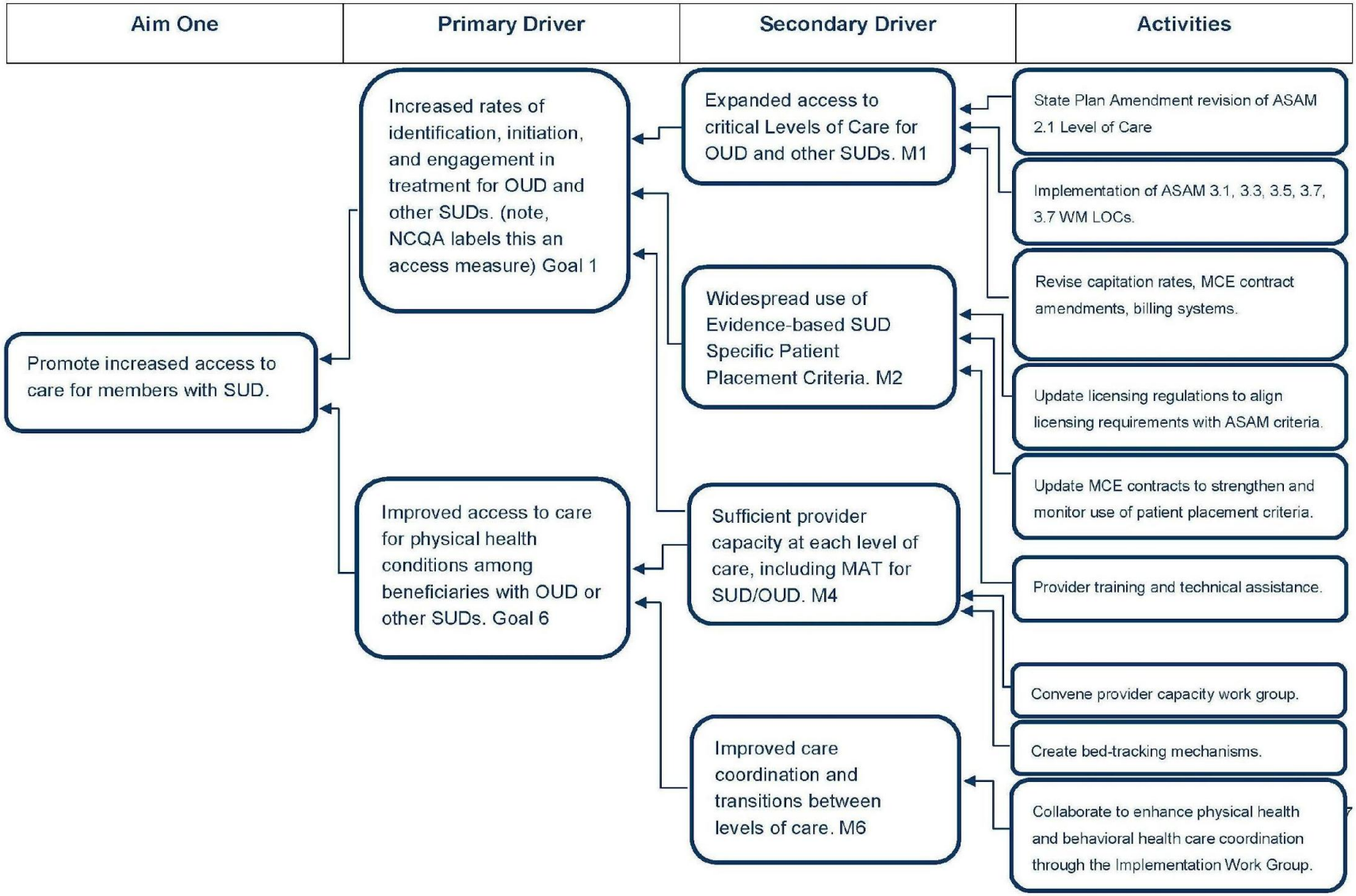
The six federal goals of the SUD waiver with Targets for Improvement are listed in the table below.

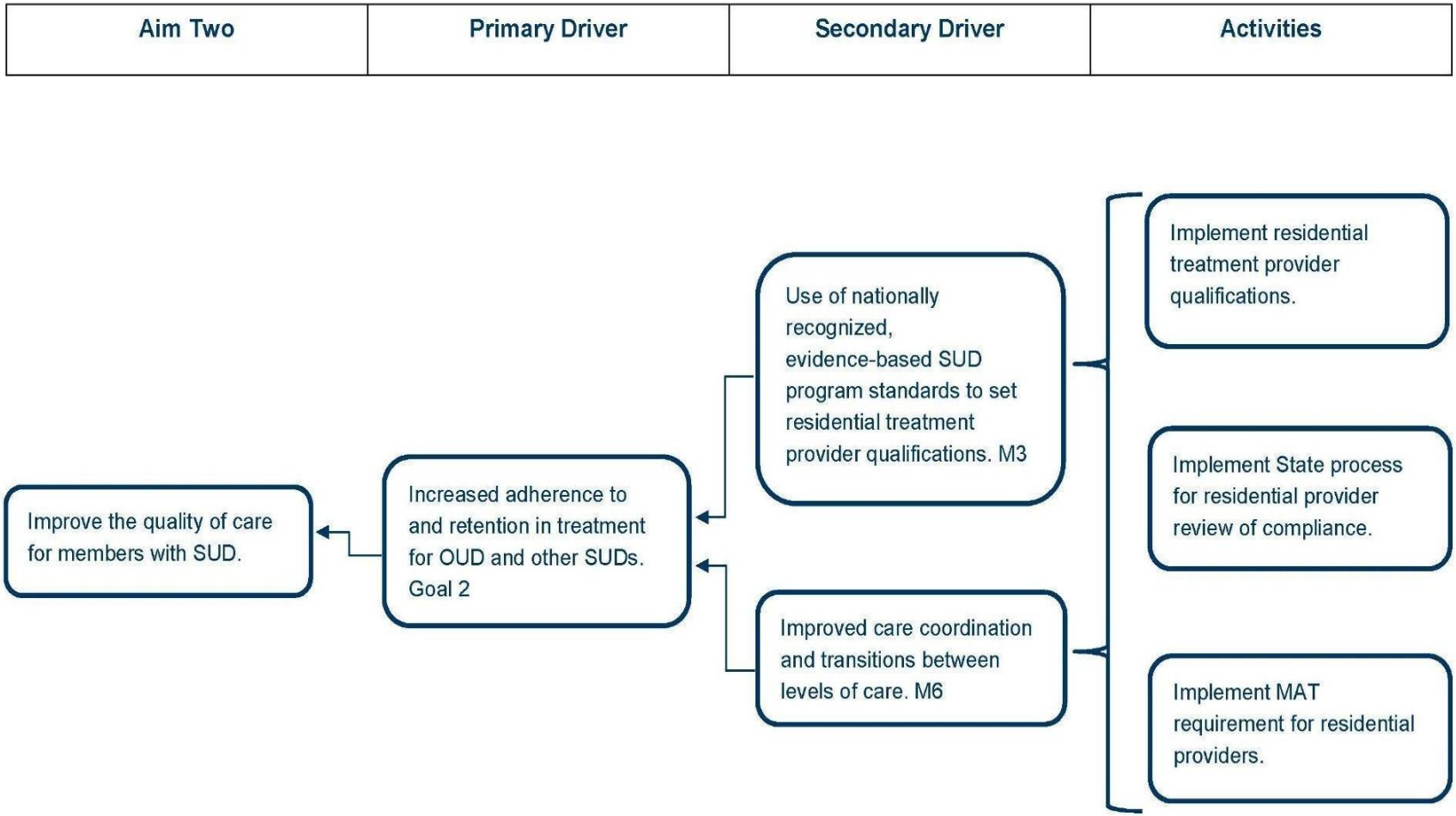
Program Goals (Primary Drivers)	
Increased rates of identification, initiation, and engagement in treatment	• Increased access to critical levels of care for OUD and other SUDs. • Increased use of Evidence-Based SUD Specific Patient Placement Criteria.
Increased adherence to and retention in treatment	• Increased use of nationally recognized, evidence-based SUD program standards to set residential treatment provider qualifications. • Improved care coordination and transitions between levels of care.
Reductions in overdose deaths, particularly those due to opioids	• Increased use of comprehensive treatment and prevention strategies to address opioid abuse and OUD. • Increased provider capacity at each level of care, including MAT for SUD/OUD.
Reduced utilization of EDs and inpatient hospital settings for treatment where the utilization is preventable or medically inappropriate through improved access to other continuum of care services	• Increased use of Evidence-Based SUD Specific Patient Placement Criteria. • Increased provider capacity at each level of care, including MAT for SUD/OUD.
Fewer readmissions to the same or higher level of care where the readmission is preventable or medically inappropriate	• Increased use of Evidence-Based SUD Specific Patient Placement Criteria. • Improved care coordination and transitions between levels of care.
Improved access to care for physical health conditions among beneficiaries	• Improved care coordination and transitions between levels of care for physical care. • Increased use of comprehensive treatment and prevention strategies to address opioid abuse and OUD.

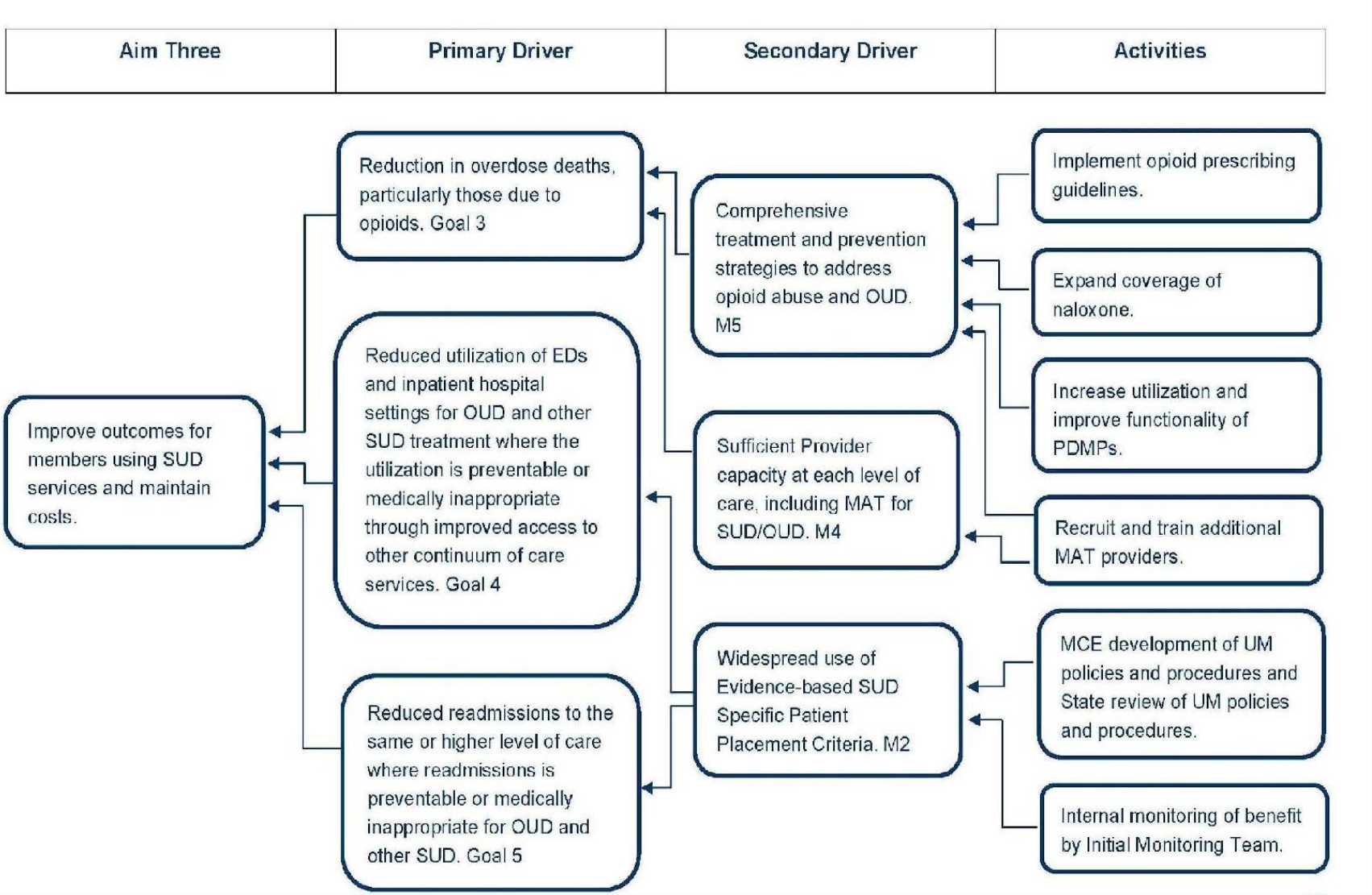
Driver Diagrams

Driver Diagrams, Research Questions and Hypotheses

The three program aims represent the ultimate intentions of the waiver. The primary drivers are strategic improvements or goals to achieve the program aims. The secondary drivers are the interventions (milestones) that will need to be reached in order achieve the strategic improvements. The performance measures outlined with the research question and hypothesis for each milestone describe specific activities completed as part of the implementation. The driver diagrams below present the connections between the program activities, milestones, strategic improvements, and aims.


Aim One
Primary Driver
Secondary Driver
Activities
Promote increased access to care for members with SUD.
Increased rates of identification, initiation, and engagement in treatment for OUD and other SUDs. (note, NCQA labels this an access measure) Goal 1
Improved access to care for physical health conditions among beneficiaries with OUD or other SUDs. Goal 6
Expanded access to critical Levels of Care for OUD and other SUDs. M1
Widespread use of Evidence-based SUD Specific Patient Placement Criteria. M2
Sufficient provider capacity at each level of care, including MAT for SUD/OUD. M4
Improved care coordination and transitions between levels of care. M6
State Plan Amendment revision of ASAM 2.1 Level of Care
Implementation of ASAM 3.1, 3.3, 3.5, 3.7, 3.7 WM LOCs.
Revise capitation rates, MCE contract amendments, billing systems.
Update licensing regulations to align licensing requirements with ASAM criteria.
Update MCE contracts to strengthen and monitor use of patient placement criteria.
Provider training and technical assistance.
Convene provider capacity work group.
Create bed-tracking mechanisms.
Collaborate to enhance physical health and behavioral health care coordination through the Implementation Work Group.


Aim Two
Primary Driver
Secondary Driver
Activities
Improve the quality of care for members with SUD.
Increased adherence to and retention in treatment for OUD and other SUDs. Goal 2
Use of nationally recognized, evidence-based SUD program standards to set residential treatment provider qualifications. M3
Improved care coordination and transitions between levels of care. M6
Implement residential treatment provider qualifications.
Implement State process for residential provider review of compliance.
Implement MAT requirement for residential providers.


Aim Three
Primary Driver
Secondary Driver
Activities
Improve outcomes for members using SUD services and maintain costs.
Reduction in overdose deaths, particularly those due to opioids. Goal 3
Reduced utilization of EDs and inpatient hospital settings for OUD and other SUD treatment where the utilization is preventable or medically inappropriate through improved access to other continuum of care services. Goal 4
Reduced readmissions to the same or higher level of care where readmissions is preventable or medically inappropriate for OUD and other SUD. Goal 5
Comprehensive treatment and prevention strategies to address opioid abuse and OUD. M5
Sufficient Provider capacity at each level of care, including MAT for SUD/OUD. M4
Widespread use of Evidence-based SUD Specific Patient Placement Criteria. M2
Implement opioid prescribing guidelines.
Expand coverage of naloxone.
Increase utilization and improve functionality of PDMPs.
Recruit and train additional MAT providers.
MCE development of UM policies and procedures and State review of UM policies and procedures.
Internal monitoring of benefit by Initial Monitoring Team.

Hypotheses About Demonstration Outcomes

The following evaluation hypotheses were designed to describe how the State intends to achieve the Demonstration's goals, as depicted in the Driver Diagrams above.

Primary Driver and Goal 1 Hypotheses: Increased Rates of Identification, Initiation, and Engagement in Treatment.

Hypothesis 1: The Demonstration will expand access to critical levels of care for OUD and other SUDs, resulting in increased rates of identification, initiation, and engagement in treatment for OUD and other SUDs.

Hypothesis 2: The Demonstration will promote widespread use of Evidence-Based SUD Specific Patient Placement Criteria resulting in increased rates of identification, initiation, and engagement in treatment for OUD and other SUDs.

Hypothesis 3: The Demonstration will promote sufficient provider capacity at each level of care, including MAT, for SUD/OUD, resulting in increased rates of identification, initiation, and engagement in treatment for OUD and other SUDs.

Primary Driver and Goal 2: Improved access to care for physical health conditions among members with OUD or other SUDs.

Hypothesis 4: The Demonstration will improve care coordination for physical care, resulting in improved access to care for physical health conditions among members with OUD or other SUDs.

Primary Driver and Goal 3: Increased adherence to and retention in treatment for OUD and other SUDs.

Hypothesis 5: The 1115 SUD Demonstration will implement use of nationally recognized, evidence-based SUD program standards to set residential treatment provider qualifications resulting in increased adherence to and retention in treatment for OUD and other SUDs.

Hypothesis 6: The 1115 SUD Demonstration will improve care coordination and transitions between levels of care qualifications resulting in increased adherence to and retention in treatment for OUD and other SUDs.

Primary Driver and Goal 4: Reduction in overdose deaths, particularly those due to opioids.

Hypothesis 7: The Demonstration will implement comprehensive treatment and prevention strategies to address opioid abuse and OUD, as well as recruit and train more providers to provide MAT, resulting in a reduction in overdose deaths.

Primary Driver and Goal 5: Reduced readmissions to the same or higher level of care where readmission is preventable or medically inappropriate for OUD and other SUD.

Hypothesis 8: The Demonstration will lead to widespread use of Evidence-Based SUD Specific Patient Placement Criteria resulting in reduced readmissions to the same or higher level of care where readmission is preventable or medically inappropriate for OUD and other SUD.

Primary Driver and Goal 6: Reduced utilization of EDs and inpatient hospital settings for OUD and other SUD treatment where the utilization is preventable or medically inappropriate through improved access to other continuum of care services.

Hypothesis 9: The Demonstration will lead to widespread use of Evidence-Based SUD Specific Patient Placement Criteria resulting in reduced utilization of EDs and inpatient hospital settings for OUD and other SUD treatment where the utilization is preventable or medically inappropriate.

Hypothesis 10: The Demonstration will improve outcomes for members using SUD services with similar or lower service costs.

This report builds on the initial findings of the Midpoint Assessment submitted to CMS on August 29, 2023, and describes ongoing progress in the first 2.5 years of the Demonstration. A full description of the methods used for interim reporting, is included in the next section of this report.

Section 4
Methodology

Evaluation Design

This Interim evaluation report of Colorado's progress in implementing its SUD 1115 Waiver Demonstration utilizes a mixed-methods evaluation design with three main goals:

- Describe the progress made on specific waiver-supported activities (process/implementation evaluation).
- Demonstrate change/accomplishments in each of the waiver milestones (short-term outcomes).
- Demonstrate progress in meeting the overall project goals/aims.

A combination of qualitative and quantitative approaches is used throughout the evaluation. Qualitative methods for the Interim Evaluation Report include focus groups with Department and provider staff, MCEs, as well as document reviews of contracts, policy guides, manuals, and quarterly monitoring reports submitted to CMS. Quantitative methods include descriptive statistics and time series analyses showing change over time in both counts and rates for specific metrics and an interrupted time series (ITS) analysis to assess the degree to which the timing of waiver interventions affect changes across specific outcome measures.

Based on our experience during the Mid-point Assessment Report, Mercer elected to use focus groups rather than individual key informant interviews to collect qualitative data from key Demonstration stakeholders. Mercer discovered that using focus groups and leveraging ongoing, already scheduled meetings allowed Mercer to collect data for a larger number and more representative group of respondents. In addition, Mercer discovered that a focus group format allowed for more robust discussion of challenges and successes, which allowed Mercer to make better conclusions and recommendations in the report.

Five focus groups were conducted between May 2024 and July 2024 with staff members in the following groups/departments who are directly responsible for SUD 1115 implementation and operations: Health Care Policy & Financing (HCPF), Behavioral Health Administration (BHA), managed service organizations (MSOs), and MCEs, as well as service providers. In addition, a consumer listening session was held in June 2024 to solicit member feedback regarding SUD service accessibility and quality.

Mercer used a narrative, thematic analysis to organize focus group content into Demonstration successes and challenges within each of the six program goals. Similarly, document reviews were used to identify and document milestones achieved.

To maximize efficiency in the evaluation, the quantitative outcome measures used for this evaluation align with performance measures being reported to CMS. As the independent evaluator/contractor, Mercer calculated the quantitative performance measures, according to metrics specifications, and based on data provided by HCPF. Mercer receives ongoing monthly transfers of Colorado's Medicaid Management Information System data, and quarterly transfers of MCE behavioral health data, from International Business Machines (IBM) through a Health Insurance Portability and Accountability Act compliant secure portal. Mercer calculates all performance measures using the period of time specified in the CMS technical manual (e.g., monthly, quarterly, or annually).

As Mercer prepared to complete the interim evaluation, Mercer worked with HCPF to attempt to gather pre-demonstration detailed claims data on inpatient and residential SUD services from (now

the BHA),[13] which coordinated residential and inpatient services with block grant funding prior to implementation of the Demonstration in 2021. However, these attempts were unsuccessful, in part due to department reorganizations that began in 2019. Ultimately, Mercer determined that it was not feasible to obtain data that would be useful for this analysis. As a result, the pre-Demonstration data is based on HCPF claims in 2020. An analysis of Transformed Medicaid Statistical Information System (T-MSIS) data from 2018–2021 showed steady increases in SUD services in each of the four years. There were more services in 2020 than in 2019, indicating that there was not a significant service drop due to the coronavirus disease 2019 (COVID-19) public health emergency (PHE). The general trend patterns observed from the annual T-MSIS data were similar to what was observed in the monthly 2020 HCPF data. This combined with the significant barriers to obtaining accurate 2018 and 2019 data, lead Mercer to determine that the 2020 pre-Demonstration data was the optimal time period for this analysis.

Target and Comparison Populations

The Demonstration is open to all adult non-expansion and expansion members, so a concurrent comparison group of Colorado Medicaid members is not available. Outcomes were assessed, where possible, using an ITS quasi-experimental design. The ITS analysis projects metrics derived from a pre-Demonstration time period into the post-Demonstration implementation time period as a comparison for actual post-Demonstration implementation metrics. Therefore, the comparison population for statistical tests of significance is, essentially, the forecasted trend line.

Mercer also completed ITS analyses for specific subpopulations of focus for the Demonstration: children, seniors and dual eligible (Medicaid and Medicare), pregnant, and criminal justice involved populations. The subpopulation analyses exponentially increase the number of trend graphs and regression equations. Therefore, for each metric, we include narrative that describes any subpopulation variations from the overall population trends and have included all of the output and graphs (including those not significant or that did not diverge from overall findings) in a technical appendix to this document.

Evaluation Period

The Interim Evaluation Demonstration period is January 1, 2021 through June 30, 2023, for monthly/quarterly quantitative data with annual metrics collected through December 31, 2023, and additional qualitative data collected through June 30, 2024. The pre-Demonstration period for comparison is January 1, 2020 to December 31, 2020, as discussed previously. Part of the interim evaluation efforts included an exploration of the use of data from 2018 and 2019 for pre-Demonstration analysis. Mercer has explored the use of that data, but it proved unavailable. Reconstructing older HCPF data files was not possible, it was cost prohibitive, and there were reservations about data accuracy and quality. Despite the unavailability of pre-2020 claims data, Mercer has conducted a separate analysis of T-MSIS data trends for 2018–2021. Mercer believes that trends beginning in 2021 are reasonable and the 2020 data do not appear vulnerable to the effects of the COVID-19 PHE. Mercer discussed this further in the Methodological Limitations section of this document.

Evaluation Measures and Data Sources

Evaluation measures are both qualitative and quantitative. Qualitative measures include descriptions of Demonstration processes and perceptions of outcomes, as gathered from policy and procedure documentation and focus groups conducted with stakeholders involved in implementing the waiver, including Department, MCE, and provider representatives, as well as Medicaid members

[13] The OBH has now been reorganized into the Behavioral Health Administration (BHA).

seeking/receiving services. Quantitative measures include required monitoring metrics and other standardized data gathered from State administrative records.

The evaluation design and evaluation measures are based on sources that provide valid and reliable data that were readily available for this reporting period. As often as possible, measures in the evaluation have been selected from nationally recognized measure stewards for which there are strict data collection processes and audited results.

Information from additional data sources, were assessed for completeness and accuracy to the best of the ability of the independent evaluator and based on State knowledge of the provider community and experience in Colorado.

ITS analysis was used for variables with sufficient data points (at least eight pre and eight post the start of the Demonstration). In cases where there are not enough data points for reliable projections (e.g., annual measures) Mercer has used a basic time series analysis to describe changes over time as observed in the Demonstration's first 2.5 years. The evaluation plan also calls for a final pre-post analysis across the entire five-year Demonstration project, which will be included in the summative evaluation report. Note: qualitative data is included in this report through June 30, 2024.

Each specific evaluation measure, its source and analytic method is included in evaluation design tables included in the approved Evaluation Design Plan, included as Appendix A to this report.

The evaluation plan also details a pre-post analysis, where possible, for annual data metrics. For the Interim Evaluation Report, since only partial data available, Mercer presents the results of descriptive analyses of changes over time for these variables. The full pre- post analyses will be included in the Summative Evaluation Report.

Section 5
Methodological Limitations

There are important limitations to the evaluation methodology utilized for the Interim Evaluation Report that should be considered. The first is that we were required to limit pre-Demonstration analyses to 2020 as obtaining data for 2018 and 2019 was not possible. The second limitation is related to the design itself because this evaluation plan relies heavily on descriptive, time series analysis, and qualitative data, this evaluation describes what happened after the Demonstration was implemented, but it is difficult to isolate why changes occurred.

Behavioral health data for the evaluation is received by HCPF in separate files for the various MCEs. There are currently eight MCEs. In the past, Mercer noted several data issues. For example, some of the MCEs use the same claim numbers, which impacts claim adjustment logic. In addition, some fields with the same name are populated with different field types across MCEs, so special care is required when analyzing the data from different MCEs, so data is not inadvertently dropped or misidentified. Mercer has worked through adjustment logic for the behavioral health data, including creating and testing unique claim identifiers.

Another important point about the data is that it is only available to the evaluator in aggregated form. Mercer considered using individual member-level data to enable more precise estimates and adjustments for confounding factors. However, at the current moment, data is only available in the aggregated form. While we recognize that this approach limits the ability of models to capture individual-level variation and reduces statistical power. Nonetheless, the evaluator believes that the results will still provide meaningful population-level outcomes associated with the SUD demonstration. The evaluator will acknowledge these limitations in the subsequent evaluation reports, along with considerations for interpreting the results. Furthermore, the evaluator will also utilize qualitative data gathered from focus groups to contextualize the quantitative findings to provide a more comprehensive understanding of Colorado's demonstration impacts.

There have also been import issues with data layout updates which will be monitored going forward. Adjustment logic will also be applied to the data, but at this time looks to be a more standardized process.

While the ITS design is the strongest available research method, in the absence of a randomized trial or matched control group, there are some threats to the validity of results in the design.[14] The primary threat is that of history, or other changes over time happening during the waiver period. This ITS design is only valid to the extent that the waiver program was the only thing that changed during the evaluation period. Other changes to policies or programs could affect the outcomes being measured under the Demonstration. Mercer has attempted to control this threat by considering other policy and program changes happening concurrent to the waiver period interventions. Mercer also use qualitative methods, in the form of key stakeholder focus groups, to identify other initiatives or events that may have occurred during the Demonstration that might influence Demonstration effects.

Mercer initially hypothesized that the COVID-19 PHE would affect the pre-Demonstration period, and Mercer anticipated a statically significant impact on most metrics. However, comparisons of our trend data to T-MSIS data and the obvious trends observed from the start of the Demonstration led Mercer to believe that there was likely not a significant effect from the emergency, likely because the number of claims was historically so low before the Demonstration that there was not a significant drop during 2020.

[14] Penfold RB, Zhang F. "Use of interrupted time series analysis in evaluating heath care quality improvements." Academic Pediatrics, 2013 Nov-Dec, 13(6Suppl): S38-44.

A related threat to the validity of this evaluation is external (history). Because Mercer has not identified a comparison group (a group of Medicaid members who would be eligible for the waiver interventions but who will not receive them and/or for whom data will not be collected), it is difficult to attribute causality. However, the ITS design controls for this threat to some degree, by linking what would have likely happened (e.g., forecasting the trajectory of counts and rates over time) without any program changes and comparing this forecast to actual changes over time. Mercer has worked to limit this threat to validity by triangulating our data. Key stakeholder focus groups were used to inform the quantitative findings and explain the degree to which individuals are seeing Demonstration impacts. In the summative evaluation, Mercer will also attempt to seek out national and other State data for benchmarking, that will allow Mercer to determine whether Colorado is performing in a similar fashion to other Demonstration states, non-Demonstration states, or national benchmarks overall.

Section 6
Results

The following section details the results of our quantitative and qualitative analyses, sorted by each of the six Demonstration goals. For each hypothesis, Mercer lists results of analysis of each measure presented in the Evaluation Design table presented in its entirety in the Evaluation Design Plan, included as an appendix to this document. To allow the reader to find each measure, Mercer lists results in the order they appear in the design table and include the details on the measure definitions, steward, subgroup analysis, and analytic methods.

Primary Driver: Increased Rates of Identification, Initiation, and Engagement in Treatment

Hypothesis 1: The Demonstration Will Expand Access to Critical Levels of Care for OUD and Other SUDs, Resulting in Increased Rates of Identification, Initiation, and Engagement in Treatment for OUD and Other SUDs

Qualitative Measures

Measure	Time Period	Data Sources	Analytic Method(s)
Revision of ASAM level 2.1 intensive outpatient SUD services and implementation of ASAM Levels of Care: 3.1, 3.3, 3.5,3.7, and 3.7WM, including access to MAT	Cumulative for interim reporting period	Interviews,[15] Document Review	Thematic analysis of interviews, policies, and contracts
Develop MCE rate methodology and update MCE contracts with capitation rates, which include revised continuum of services	Cumulative for interim reporting period	Key Informant Interviews; Document Review	Thematic analysis of interviews, policies, and contracts

The Demonstration intended to revise and expand critical levels of care in alignment with ASAM standards, therefore increasing access to critical levels of care for Medicaid members. State documents (include MCE contracts and rate documents) and quarterly monitoring reports indicate that with the added coverage for partial hospitalization (2.5) as of July 1, 2024, all levels of care have been implemented. This is confirmed through stakeholder focus groups who described implementation of each ASAM level as a “heavy lift,” but ultimately successful. There was commonality across the stakeholder groups that movement to the ASAM and the Demonstration in general has increased the number of Medicaid members who are receiving treatment for substance use issues.

[15] Rather than individual key informant interviews (KIIs), Mercer conducted focus groups with MCEs, State staff, providers and people receiving services. This allowed us to incorporate more perspectives than would have been available through fewer interviews.

All implementation activities for Milestone 1 (Access to Critical Levels of Care for OUD and Other SUDs) have been completed. In addition to the implementation of new ASAM levels of care, these activities included an MCE rate methodology that reflects continuum of additional and modified services, new MCE contract amendments to reflect updated capitation rates for new and modified services, and billing system changes to allow for claim submission for new services (residential and inpatient) and changes to existing service billing rules (intensive outpatient [IOP]).

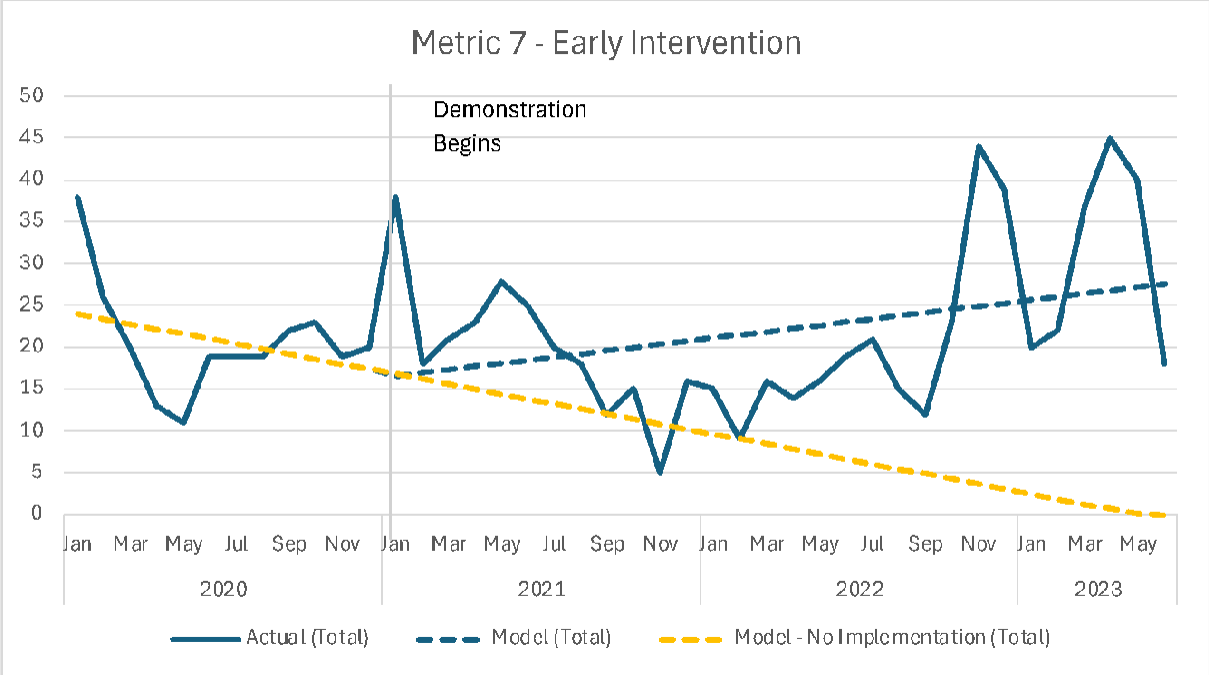
Measure summary: The qualitative measure results support Hypothesis 1 that the Demonstration has increased access to critical levels of care for OUD and other SUDs.

Measure (CMS Metric #7): Number/Percentage of Beneficiaries who Receive Prevention or Early Intervention Services

Measure	Time Period	Data Sources	Analytic Method(s)
Number/percentage of beneficiaries who receive prevention or early intervention services (CMS #7) (Denominator for percentages is Medicaid members with an SUD diagnosis)	Monthly, January 2020 to June 2023	Claims/encounters	ITS, including[16] each demographic subgroup

[16] Separate analysis for each subgroup was conducted, rather than controlling for subgroups in the ITS due to drastically different sample sizes in several subgroups. This applies to all ITS analyses.

Metric #7: Members Receiving Early Intervention through Quarter Ending (QE) June 30, 2023

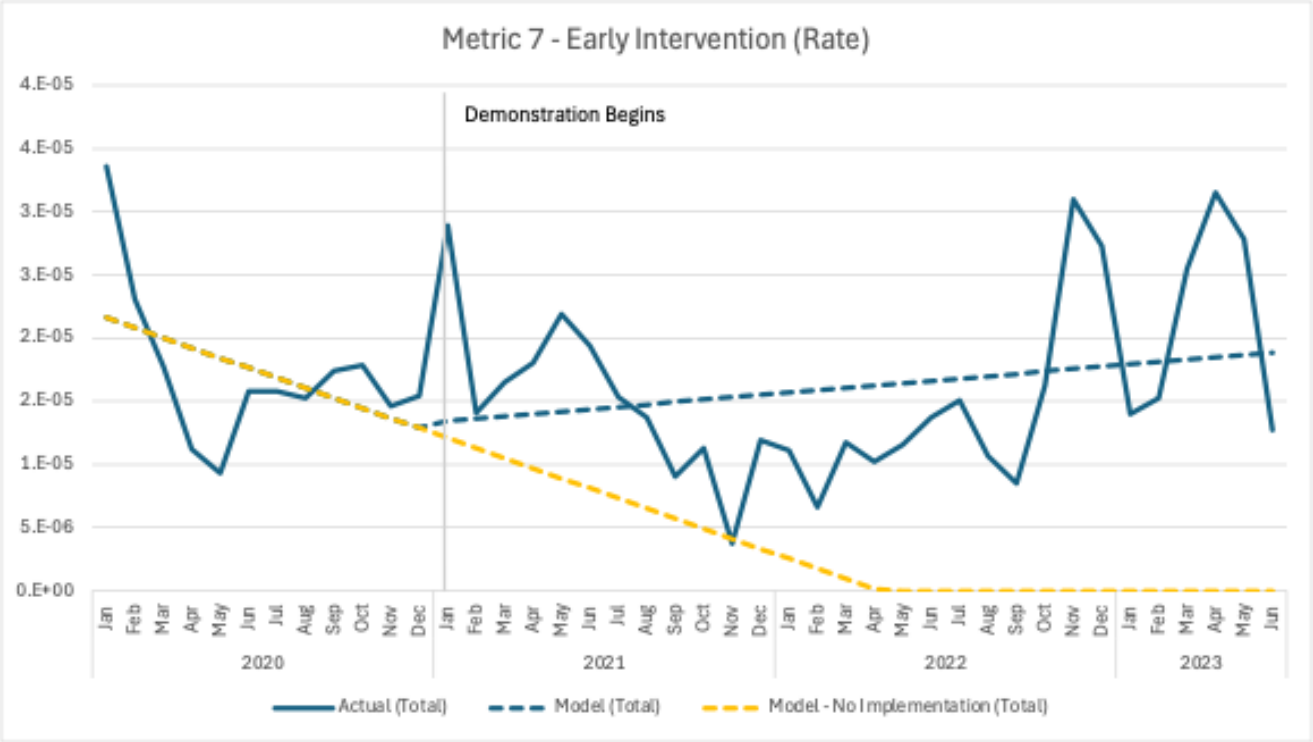


Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	24.6364	5.7565	4.280	0.000122 ***
df$demonstration	-12.9157	8.0926	-1.596	0.118776
df$time	-0.5979	0.7822	-0.764	0.449335
df$demonstration:df$time	0.9765	0.8067	1.211	0.233523

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 9.353 on 38 degrees of freedom
Multiple R-squared: 0.1049, Adjusted R-squared: 0.03427
F-statistic: 1.485 on 3 and 38 DF, p-value: 0.234



Coefficients:				
	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	2.242E-05	4.264E-06	5.257	5.93e-06 ***
df$demonstration	-1.141E-05	5.994E-06	-1.904	0.0645 .
df$time	-7.953E-07	5.793E-07	-1.373	0.1779
df$demonstration:df$time	9.825E-07	5.974E-07	1.644	0.1083

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 6.927e-06 on 38 degrees of freedom
Multiple R-squared: 0.0896, Adjusted R-squared: 0.01773
F-statistic: 1.247 on 3 and 38 DF, p-value: 0.3064

The Demonstration trend (the blue dotted line) shows an increase in services above what was predicted without the Demonstration (the yellow dotted line). However, because of the large variability and small number of members receiving early intervention services, there is not a statistically significant trend either pre- or post-Demonstration. The ITS is unable to detect any statistically significant change from the Demonstration.

An ITS analysis using the rate of members (as opposed to counts) revealed the same trends. There were no significant effects of the Demonstration on the percentage of Medicaid members receiving early intervention services.

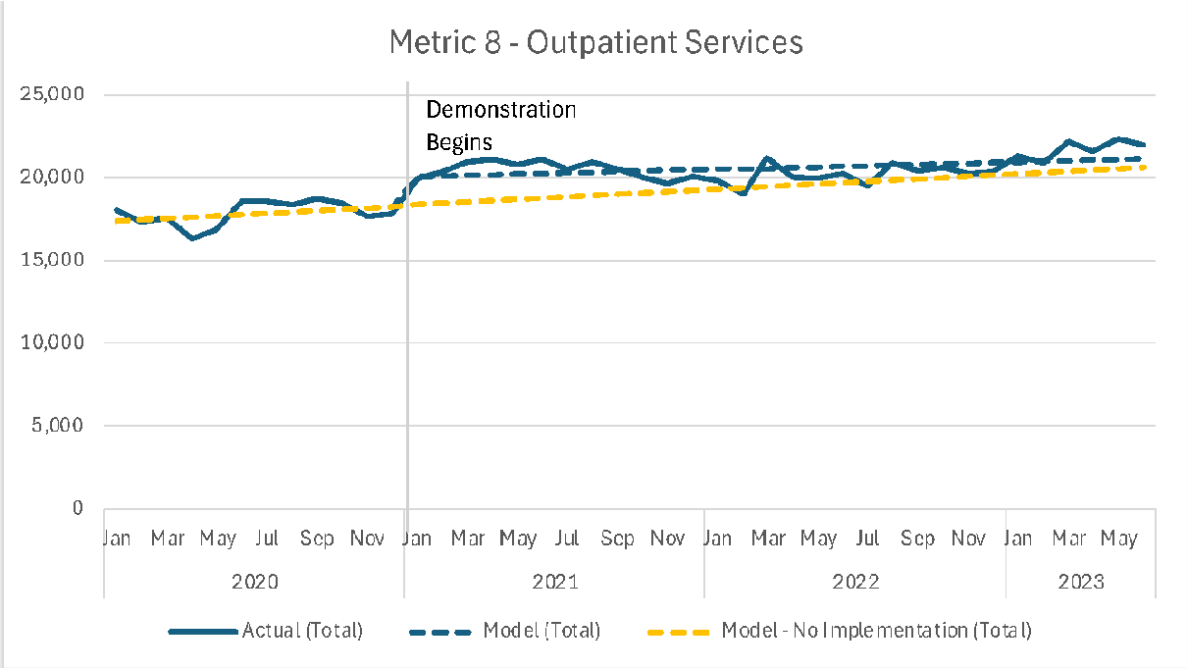
Early Intervention Services (Metric #7) for Subgroups

Trends for all Medicaid members were small and there was considerable variability in the numbers receiving services from month-to-month over the course of the Demonstration. This held true for all subpopulations of focus — numbers were too small and variable to yield meaningful and statistically significant results for any of the subgroups.

Measure summary: This measure does not support Hypothesis 1 that the Demonstration has increased access to critical levels of care for OUD and other SUDs.

Measure (CMS Metric #8): Members Receiving Outpatient Services through QE June 30, 2023

Measure	Time Period	Data Sources	Analytic Method(s)
Number/percentage of beneficiaries who use outpatient services (CMS #8) (Denominator for percentages is Medicaid members with an SUD diagnosis)	Monthly, January 2020 to June 2023	Claims/ encounters	ITS, including each demographic subgroup

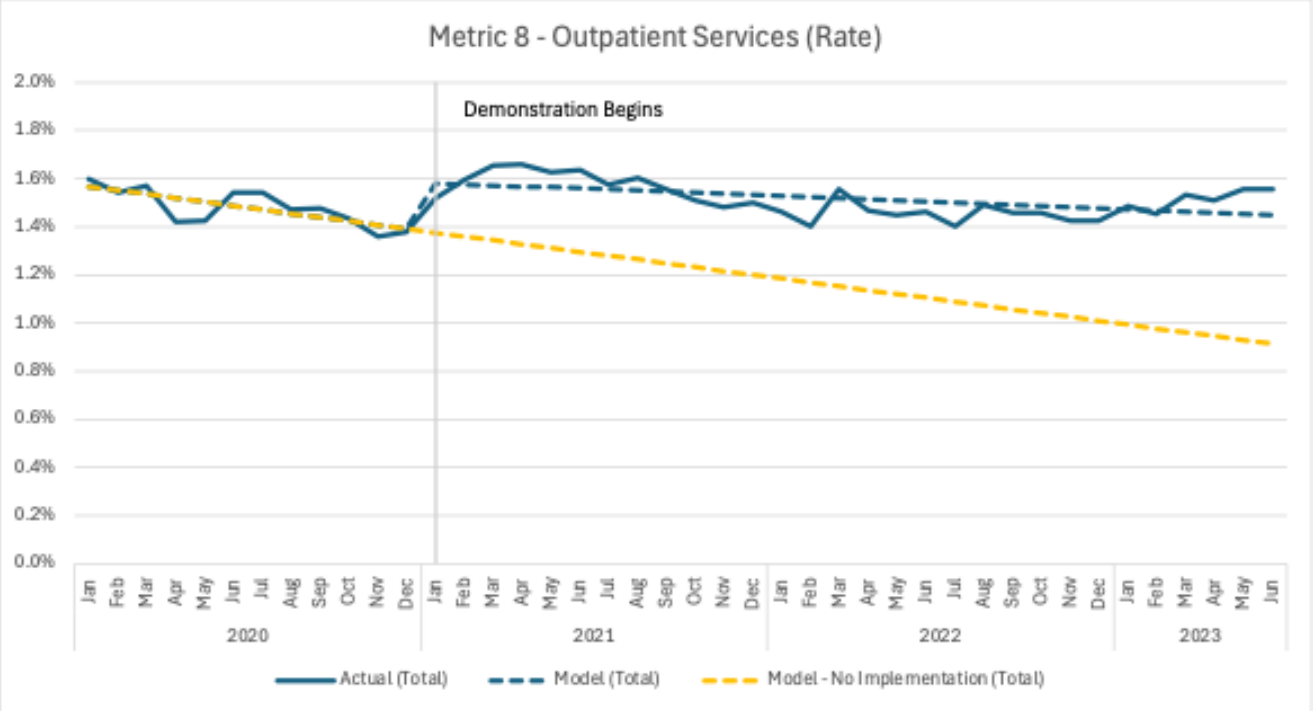


Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	17373.55	442.87	39.230	< 2e-16 ***
df$demonstration	2277.07	622.59	3.657	0.000769 ***
df$time	79.30	60.17	1.318	0.195438
df$demonstration:df$time	-43.12	62.06	-0.695	0.491370

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 719.6 on 38 degrees of freedom
Multiple R-squared: 0.778, Adjusted R-squared: 0.7605
F-statistic: 44.4 on 3 and 38 DF, p-value: 1.69e-12



Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	1.583E-02	3.745E-04	42.278	< 2e-16 ***
df$demonstration	5.761E-04	5.264E-04	1.094	0.28071
df$time	-1.594E-04	5.088E-05	-3.134	0.00332 **
df$demonstration:df$time	1.139E-04	5.247E-05	2.170	0.03629 *

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.0006084 on 38 degrees of freedom
Multiple R-squared: 0.4008, Adjusted R-squared: 0.3535
F-statistic: 8.472 on 3 and 38 DF, p-value: 0.0001955

There was a very small and insignificant positive trend pre-Demonstration, and while the post-Demonstration trend was lower (but still positive), the change was not statistically significant. There was a one-time statistically significant increase in utilization at the beginning of the Demonstration period. This is consistent with the Demonstration increasing outpatient SUD service utilization-.

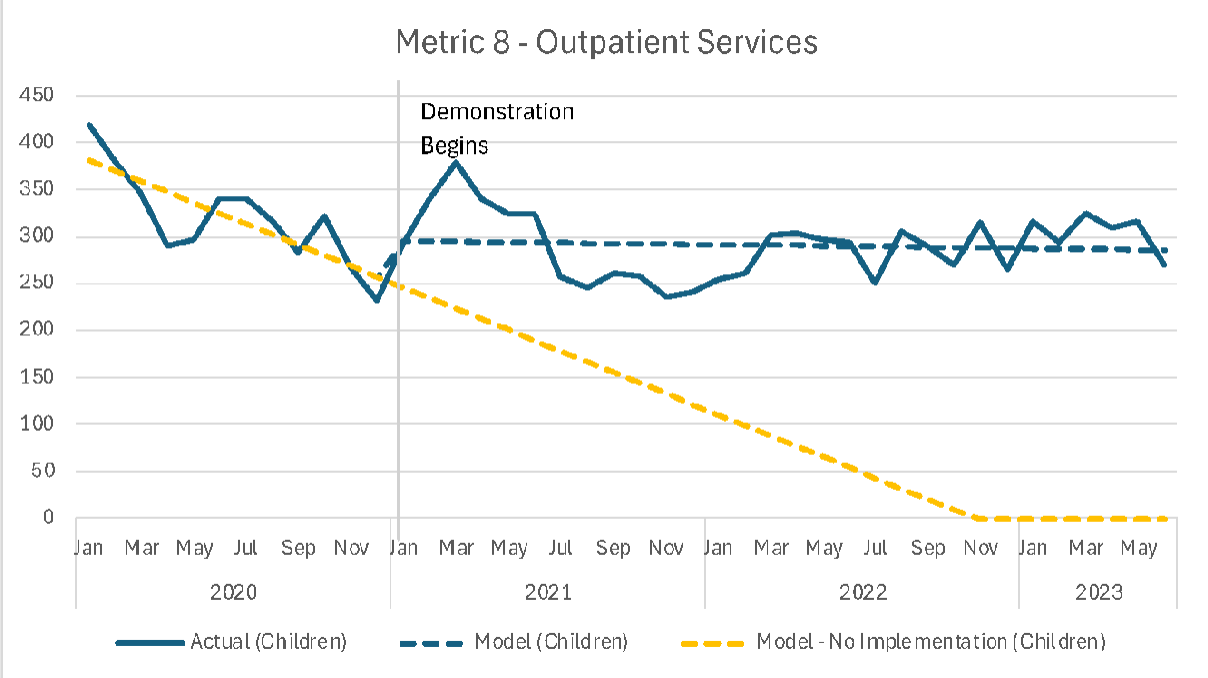
When repeating the analysis using rates rather than counts, the opposite pattern emerged, with a decreasing trend becoming closer to zero during the Demonstration period. Time trends were only statistically significant for the proportion data. The Demonstration increased the overall number of members receiving outpatient services initially, and the rate of Medicaid members who received treatment continued to increase significantly over the Demonstration period.

Outpatient Services (Metric #8) for Subgroups

There were no significant effects for dual eligible, OUD, or criminal justice involved populations. However, like the total Medicaid population, pregnant participants experienced a one-time increase in utilization of outpatient services during the Demonstration period, but there was not a statistically significant change in the trend during the Demonstration.

Both children and seniors; however, showed a statistically significant increase[17] in the utilization of outpatient services during the Demonstration period as compared to the pre-Demonstration-trend. This is depicted visually in the two graphs below.

Metric #8: Outpatient Children's Services



[17] p<.01

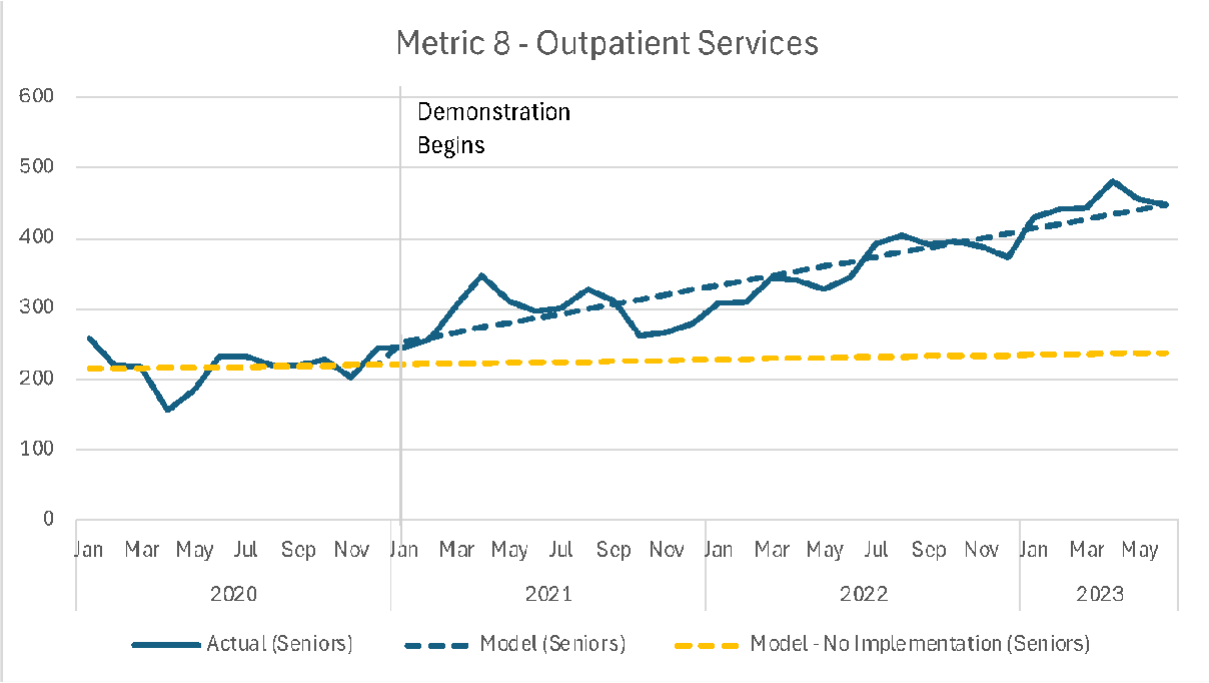
Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	393.091	21.099	18.63	< 2e-16 ***
df$demonstration	-92.840	29.662	-3.130	0.003354 **
df$time	-11.283	2.867	-3.936	0.000342 ***
df$demonstration:df$time	10.958	2.957	3.706	0.000668 ***

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 34.28 on 38 degrees of freedom
Multiple R-squared: 0.3624, Adjusted R-squared: 0.312
F-statistic: 7.199 on 3 and 38 DF, p-value: 0.000609

Metric #8: Outpatient Senior Services



Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	214.3788	18.2968	11.717	3.5e-14 ***
df$demonstration	-47.5131	25.7219	-1.847	0.0725 .
df$time	0.5699	2.486	0.229	0.8199
df$demonstration:df$time	6.1162	2.5639	2.385	0.0221 *

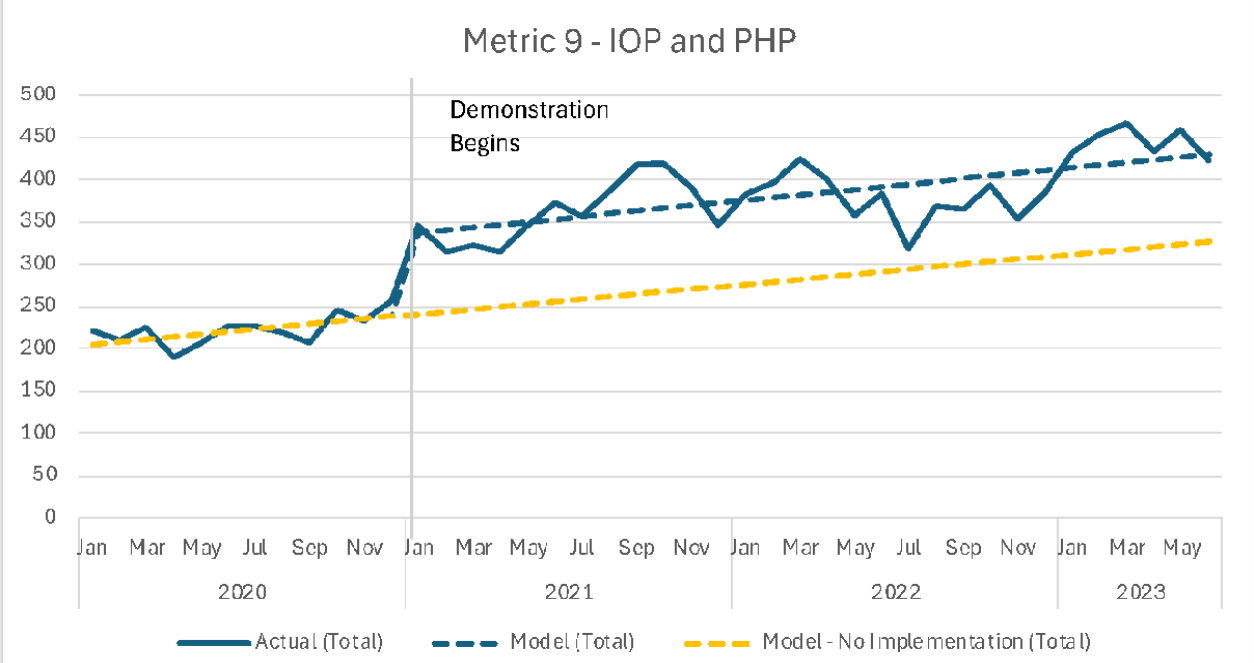
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 29.73 on 38 degrees of freedom
Multiple R-squared: 0.8821, Adjusted R-squared: 0.8728
F-statistic: 94.8 on 3 and 38 DF, p-value: < 2.2e-16

Measure summary: This measure provides some support for Hypothesis 1 — that the Demonstration has increased access to critical levels of care for OUD and other SUDs. In particular, the Demonstration appears to have increased use of outpatient services for Medicaid members in general. In terms of subpopulations of interest, the Demonstration appears to have increased outpatient services for seniors and for children.

Measure	Time Period	Data Sources	Analytic Method(s)
Number/percentage of beneficiaries who use IOP and partial hospitalization services (CMS #9) (Denominator for percentages is Medicaid members with an SUD diagnosis)	Monthly, January 2020 to June 2023	Claims/encounters	ITS, including each demographic subgroup

Measure (CMS Metric #9): Members Receiving IOP/Partial Hospitalization (PH) through QE June 30, 2023

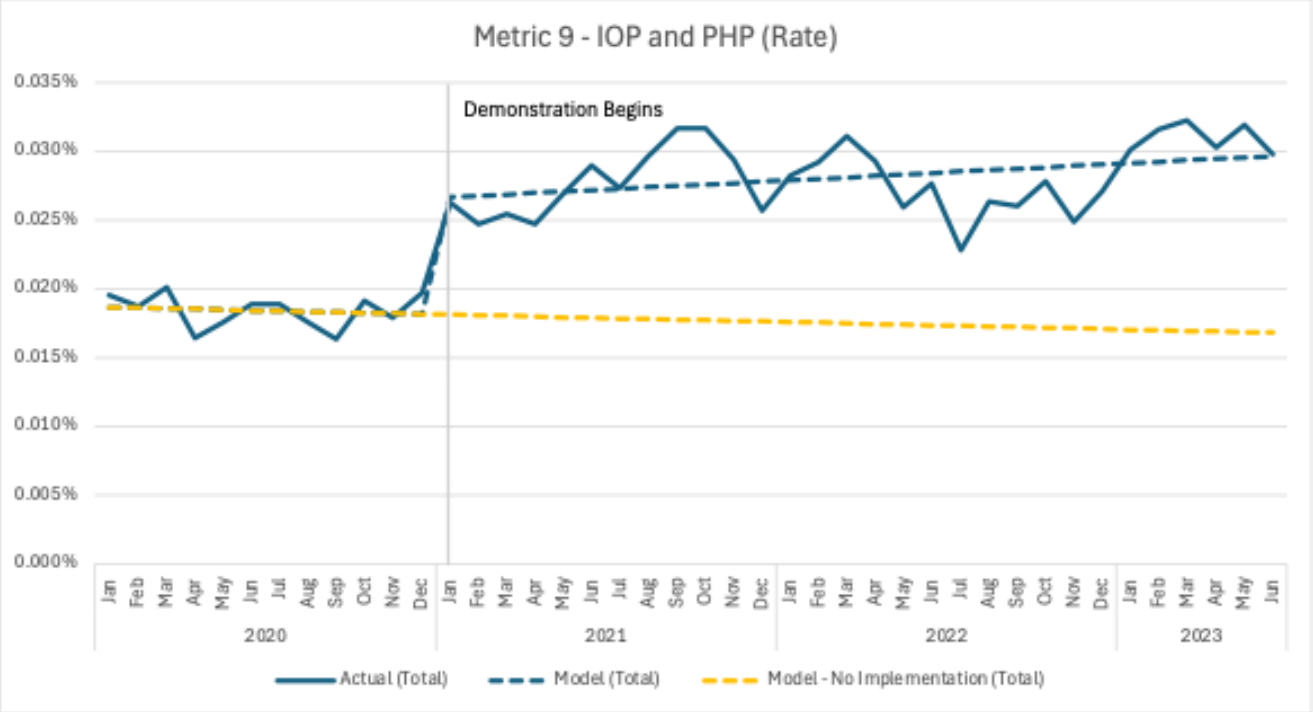


Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	203.6364	18.0695	11.270	1.11e-13 ***
df$demonstration	92.9811	25.4025	3.660	0.000763 ***
df$time	2.9406	2.4552	1.198	0.238451
df$demonstration:df$time	0.2503	2.5321	0.099	0.921769

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 29.36 on 38 degrees of freedom
Multiple R-squared: 0.8833, Adjusted R-squared: 0.8741
F-statistic: 95.9 on 3 and 38 DF, p-value: < 2.2e-16



Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	1.869E-04	1.351E-05	13.833	< 2e-16 ***
df$demonstration	6.622E-05	1.899E-05	3.487	0.00125 **
df$time	-4.474E-07	1.836E-06	-0.244	0.80873
df$demonstration:df$time	1.478E-06	1.893E-06	0.781	0.43973

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 2.195e-05 on 38 degrees of freedom
Multiple R-squared: 0.8208, Adjusted R-squared: 0.8066
F-statistic: 58.02 on 3 and 38 DF, p-value: 2.974e-14

As the case with outpatient services, there was a very small and insignificant positive trend pre-Demonstration. The trend post-Demonstration increased (but not significantly), and the relative increase in the first month of the Demonstration was larger than for outpatient services. This is consistent with the Demonstration increasing IOP/partial hospitalization utilization. Because partial hospitalization was not implemented until July 2024, Mercer assumes the increases were driven by IOP services. This is also likely why the number of claims are so small over the observation period.

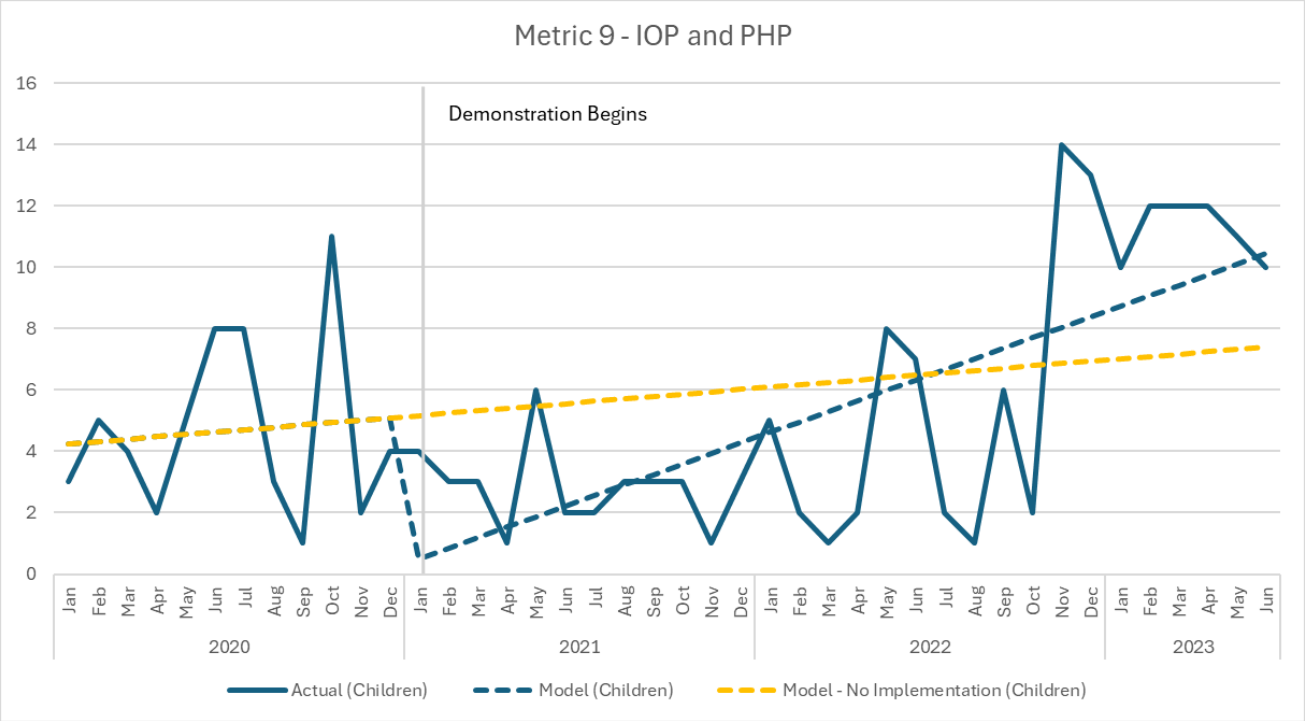
The results were the same when statistical analyses were performed on rates, rather than counts. The percent of members with an IOP/partial hospitalization service had a steep and significant increase immediately following implementation, but there was no significant increase in rates thereafter.

IOP/PHP Services (Metric #9) for Subgroups

For most subgroups, trends were either the same as the total population or numbers were too small for tests of statistical significance.

However, the child subgroup trends were different. This group experienced a statistically significant **decrease** in utilization at the beginning of the Demonstration, followed by a nonsignificant increase in trend. These factors offset each other, and by the end of the data period, the Demonstration utilization for children was above the pre-Demonstration trend, as shown in the chart below.

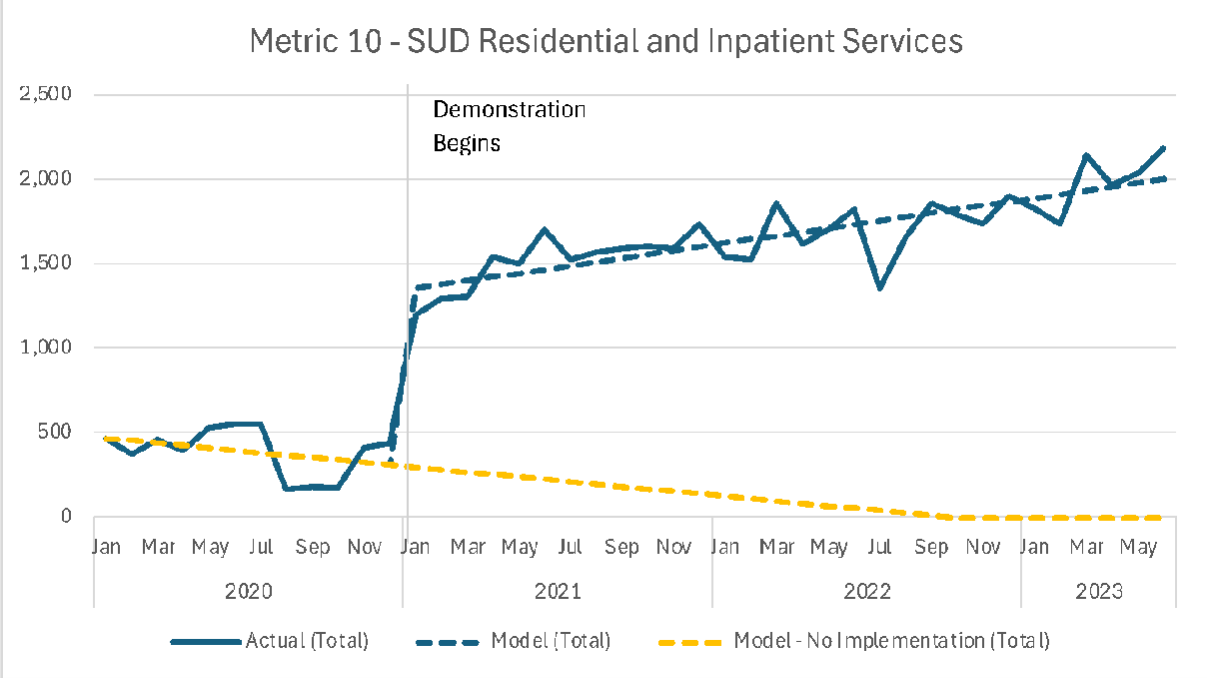
Metric #9: Children Receiving IOP/PHP Services



Measure summary: This measure provides some support for Hypothesis 1 — that the Demonstration has increased access to critical levels of care for OUD and other SUDs. The Demonstration appears to have resulted in a one-time increase in the use of IOP services for Medicaid members in general. In terms of subpopulations of interest, the Demonstration appears to have also resulted in an initial increase in IOP services for each subpopulation, except for children who experienced an initial decrease, followed by a slight trend increase.

Measure (CMS Metric #10): Members Receiving SUD Residential and Inpatient Services through QE June 30, 2023

Measure	Time Period	Data Sources	Analytic Method(s)
Number/percentage of beneficiaries who use residential and/or inpatient services for SUD (CMS #10) (Denominator for percentages is Medicaid members with an SUD diagnosis)	Monthly, January 2020 to June 2023	Claims/encounters	ITS, including each demographic subgroup

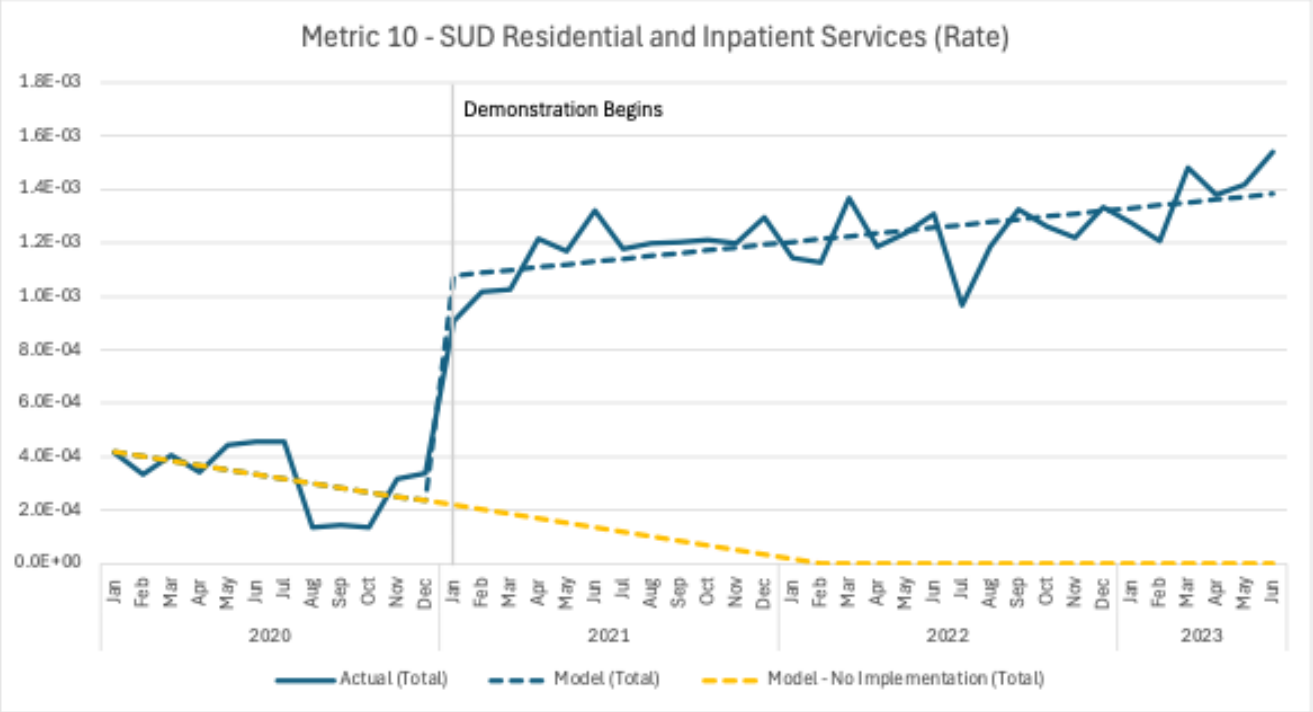


Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	485.06	84.73	5.725	1.36e-06 ***
df$demonstration	584.32	119.12	4.905	1.78e-05 ***
df$time	-14.27	11.51	-1.239	0.22289
df$demonstration:df$time	36.53	11.87	3.076	0.00387 **

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 137.7 on 38 degrees of freedom
Multiple R-squared: 0.9553, Adjusted R-squared: 0.9518
F-statistic: 270.7 on 3 and 38 DF, p-value: < 2.2e-16



Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	4.360E-04	6.654E-05	6.552	1.00e-07 ***
df$demonstration	5.026E-04	9.355E-05	5.372	4.13e-06 ***
df$time	-1.671E-05	9.041E-06	-1.848	0.07246 .
df$demonstration:df$time	2.729E-05	9.325E-06	2.927	0.00576 **

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.0001081 on 38 degrees of freedom
Multiple R-squared: 0.9424, Adjusted R-squared: 0.9379
F-statistic: 207.3 on 3 and 38 DF, p-value: < 2.2e-16

While the pre-Demonstration trend was negative, it was not statistically different from zero. Thus, while COVID-19 may have had some impact on the 2020-based trend line, accounting for it by removing the July–November decrease in services does not impact our analysis. At the start of the Demonstration there were statistically significant increases in both the initial utilization and trend in SUD Residential and Inpatient Services. The magnitude of the change in January 2021 strongly suggests the change was driven by the Demonstration.

Trends for the proportion of Medicaid members receiving services was the same as the trend for the number of members receiving residential or inpatient treatment.

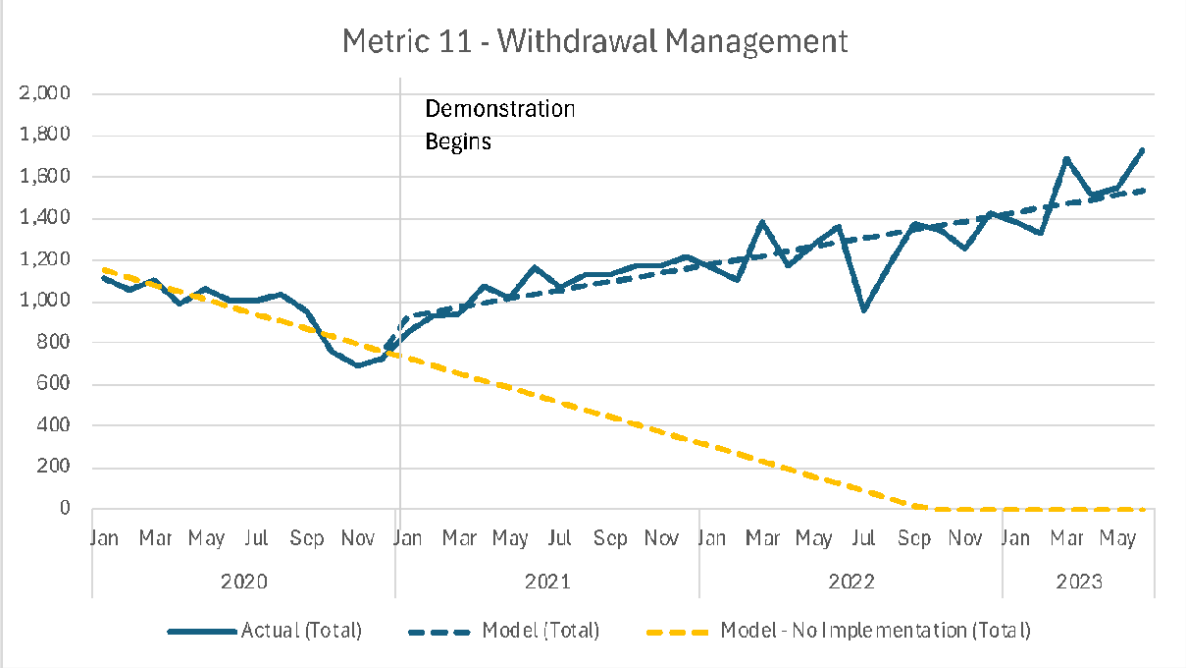
Residential and Inpatient Services (Metric #10) for Subgroups

Trends for several of the subgroups analyzed were the same as those for the total Medicaid population or contained numbers too small for a reliable analysis. Utilization trends for the child, pregnant, and criminal justice involved populations were positive during the Demonstration period, but those increases were not statistically significant.

Measure summary: This measure provides support for Hypothesis 1 — that the Demonstration has increased access to critical levels of care for OUD and other SUDs. The Demonstration appears to have led to increases in residential and inpatient treatment services for Medicaid members in general. Trends were positive for the subpopulations of interest, but numbers were too small for reliable analysis.

Measure (CMS Metric #11): Members Receiving WM through QE June 30, 2023

Measure	Time Period	Data Sources	Analytic Method(s)
Number/percentage of beneficiaries who use WM services (CMS #11) (Denominator for percentages is Medicaid members with an SUD diagnosis)	Monthly, January 2020 to June 2023	Claims/encounters	ITS, including each demographic subgroup

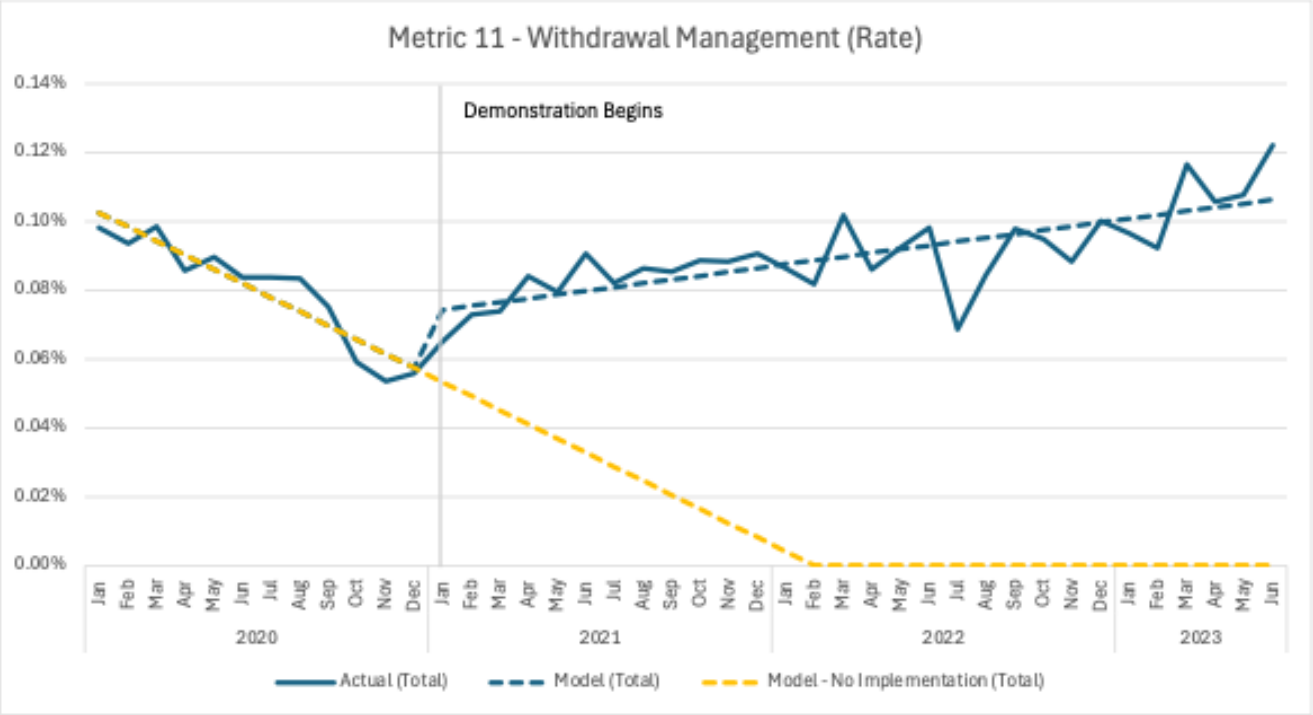


Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	1190.182	64.332	18.501	< 2e-16 ***
df$demonstration	-526.039	90.439	-5.817	1.02e-06 ***
df$time	-35.451	8.741	-4.056	0.000239 ***
df$demonstration:df$time	56.239	9.015	6.238	2.68e-07 ***

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 104.5 on 38 degrees of freedom
Multiple R-squared: 0.8129, Adjusted R-squared: 0.7981
F-statistic: 55.04 on 3 and 38 DF, p-value: 6.704e-14



Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	1.066E-03	4.860E-05	21.939	< 2e-16 ***
df$demonstration	-4.668E-04	6.833E-05	-6.832	4.15e-08 ***
df$time	-4.100E-05	6.604E-06	-6.209	2.94e-07 ***
df$demonstration:df$time	5.202E-05	6.811E-06	7.638	3.42e-09 ***

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 7.897e-05 on 38 degrees of freedom
Multiple R-squared: 0.7181, Adjusted R-squared: 0.6959
F-statistic: 32.27 on 3 and 38 DF, p-value: 1.526e-10

The pre-Demonstration trend in WM services was negative, and the decline began before the COVID-19 PHE. The trend began to show increases in these services at the start of the

Demonstration, although there was a decline in the first Demonstration month. This change was statistically significant. There was also an offsetting one time change in the intercept, which is not visually apparent in the graph. The net effect of the Demonstration is a relatively large increase in utilization of WM. This trend holds when analyzed using the proportion of Medicaid members receiving WM services. More surprising is the absolute number of members in WM compared to residential services. There appear to be as many members in WM levels of care (approximately 1500 monthly) as in residential and inpatient treatment (approximately 1500) suggesting that members are not being retained in residential care including ASAM 3.5 and 3.1 treatment and reintegration which would lead to longer term successful outcomes.

WM Services (Metric #11) for Subgroups

For all but one subgroup, trends mirrored those of the total Medicaid population, but were less likely to be statistically significant, largely due to small numbers in these subpopulations. For pregnant women, there was a statistically significant initial **decrease** in WM services immediately following implementation of the Demonstration, followed by a steady increase that is not statistically significant.

Measure summary: This measure provides support for Hypothesis 1 — that the Demonstration has increased access to critical levels of care for OUD and other SUDs. The Demonstration appears to have led to increases in WM services for Medicaid members in general. Trends were positive for the subpopulations of interest, except for pregnant women, but numbers were too small for reliable analysis.

Measure (CMS Metrics #5 and #36): Number and Average Length of IMD Stays for SUD

Measure	Time Period	Data Sources	Analytic Method(s)
Number of members with an institute for mental disease (IMD) stay (Metric #5)	Yearly, 2020–2022	Claims/encounters	Descriptive analysis
Average length of IMD stay for SUD (Metric #36)	Yearly, 2020–2022	Claims/encounters	Descriptive analysis[18]

Measure	January 1–December 31, 2020	January 1–December 31, 2021	January 1–December 31, 2022	January 1–December 31, 2023	Percentage of Change
#5 Medicaid Beneficiaries Treated in an IMD for SUD	507	652	667	576	+ 13.6%
#36 Average length of IMD stay for SUD	2.0	5.1	9.1	13.0	+ 566.6%

[18] Pre-post analysis will be included in the Summative Evaluation Report when more data points are available. Because the interim report did not anticipate conducting a pre-post test for annual metrics, Mercer did not request the State calculate variances in addition to averages. Without measures of variance, Mercer cannot compute statistical significance for the changes across the first three DYs.

There was an increase (13.6%) in the number of Medicaid members treated in an IMD after the Demonstration was implemented. There was also a large (566.6%) increase in the average length of stay in an IMD for Medicaid members between the baseline period and the second DY, however, the average length of IMD stays for SUD continues to remain below 50% of CMS expectations that the statewide ALOS remains at or below 30 days. Furthermore, the increase observed in the ALOS is likely driven by an increase in residential stays that became allowable under this Demonstration; prior to the SUD Demonstration, only hospitalizations, which have shorter lengths of stay, were counted as part of this measure.

Measure Summary: This measure supports Hypothesis 1 — that the Demonstration has increased access to critical levels of care for OUD and other SUDs. The Demonstration appears to be associated with an increase in both the number of members treated in an IMD for SUD and the average length of those stays, consistent with the Demonstration's goal of enhancing overall access to SUD treatment.

Hypothesis 2: The Demonstration will Promote Widespread use of Evidence-Based SUD Specific Patient Placement Criteria Resulting in Increased Rates of Identification, Initiation, and Engagement in Treatment for OUD and Other SUDs

Measure: Number of Providers Licensed at Each Level of Care

Metric #13 Measure	January 1–December 31, 2020	January 1–December 31, 2021	January 1–December 31, 2022	January 1–December 31, 2023	Percentage of Change
#13 Number of Providers Licensed	2,818	3,121	2,928	3,085	+ 9.5%

Current data reported by the State includes the total number of licensed providers (CMS Metric #13). The State has just completed implementing each ASAM level of care and is now working to assess capacity for each level of care and to encourage providers to provide multiple levels of care. For this report, data on specific providers and provider capacity at each level of care is limited to qualitative data. Mercer will work with the State to report provider counts at each level for the Summative Evaluation Report.

The number of providers increased during the first DY, but then fell in DY2, and then increased again in DY3. Most stakeholders reported that there is not always sufficient capacity within existing providers to provided needed care, particularly in rural areas and with services for specific populations, particularly children and pregnant people.

Measure Summary: This measure is consistent with Hypothesis 2 that the Demonstration will promote widespread use of Evidence-Based SUD Specific Patient Placement Criteria resulting in increased rates of identification, initiation, and engagement in treatment for OUD and other SUDs. An important facet of increasing treatment is establishing sufficient capacity. While there have been modest increases in the number of licensed providers, stakeholders indicated that more capacity is needed in some areas, as described below.

Qualitative Measures

Measure	Time Period	Data Sources	Analytic Method(s)
Description of activities to monitor MCE use of ASAM criteria for patient placement	Cumulative for interim reporting period	Key Informant Interviews;[19] Document Review	Thematic analysis of interviews, policies, and contracts
Description of training and technical assistance activities to align providers with ASAM standards	Cumulative for interim reporting period	Key Informant Interviews;[20] Document Review	Thematic analysis of interviews, policies, and contracts

Colorado has implemented all the planned implementation activities associated with Milestone 2 (Use of Evidence-Based, SUD Specific Patient Placement Criteria), including updating licensing regulations and MCE contracts to align with new and updated services. The State has also implemented training and technical assistance regarding ASAM standards with providers and the MCEs have developed utilization management (UM) practices. The State also routinely reviews UM data to ensure that members receive episodes of care that support their recovery, minimum authorization requirements reflect utilization trends in Colorado, and administrative burden is decreased. Regular communication with providers regarding the changes and available support is also ongoing.

Monitoring, Training, and Technical Assistance Activities on use of ASAM Criteria

Health Services Advisory Group, Inc. (HSAG) conducted an annual audit for 2023 of 33% of all denials of authorization requests for inpatient and residential SUD treatment for each of Colorado's Medicaid MCEs to determine whether the MCEs properly followed the ASAM criteria when making denial determinations. Additionally, the review provided recommendations to the Department for program improvement. Overall, reviewers were in agreement with 84% of denials (down from 100% in 2022). The report made the following recommendations:

- "Encourage standardized training for the MCEs, continue its provider stakeholder meetings that offer ongoing technical assistance, and enhance monitoring to ensure adherence to the ASAM criteria, which may impact appropriate access to services for the right care, at the right place, and at the right time.
- Encourage training for MCE UM staff members and providers regarding the appropriate ASAM criteria (e.g., admissions or continued stay, older adult, and adolescent) and minimum documentation required based on the type of review, level of care, and special population considerations.
- Revise its guidance to the MCEs regarding allowing denials without requesting treatment plans for continued stay reviews. The use of treatment plans in continued stay, transfer, and discharge determinations is an important component of using the ASAM level of care placement criteria to fidelity.

[19] Rather than individual KIIs, Mercer conducted focus groups with MCEs, State staff, providers and people receiving services. This allowed us to incorporate more perspectives than would have been available through fewer interviews.

[20] Ibid.

- Provide the MCEs with a universal definition of administrative denials and medical necessity denials to use for all projects and deliverables to the Department and its vendors. Included in this definition should be a defined set of administrative and medical necessity denial reasons, and a time frame for what constitutes a late submission that may lead to an administrative denial."[21]

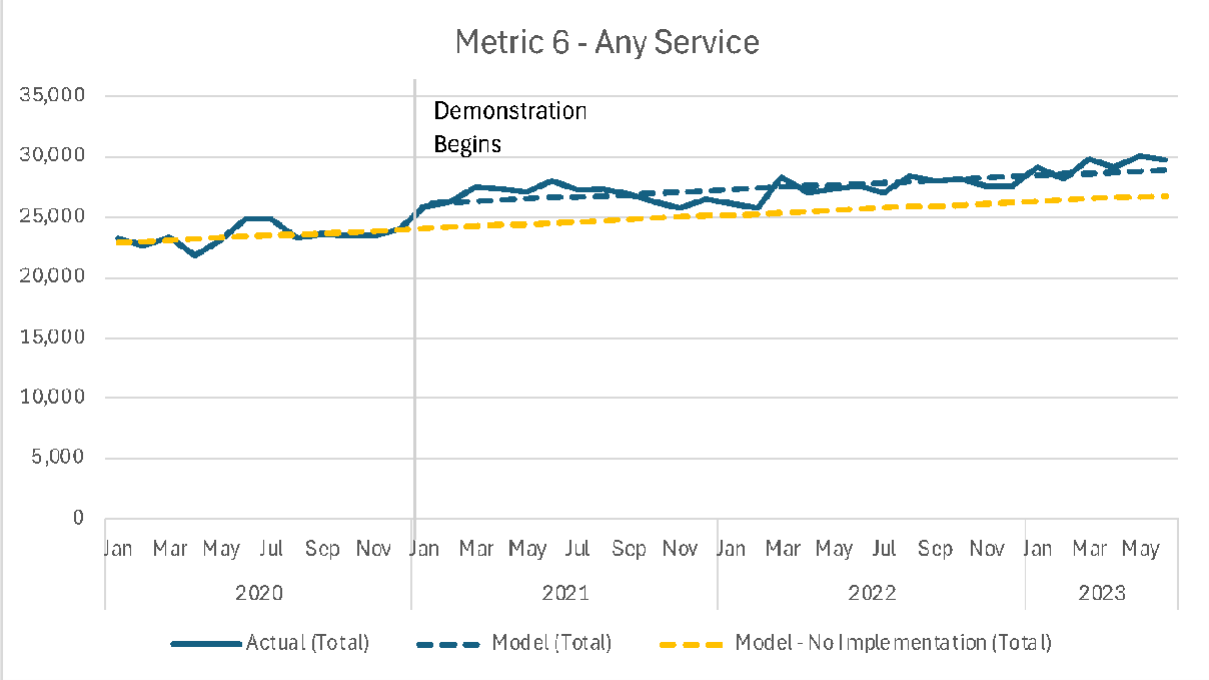
Feedback from providers aligned with the HSAG report. Providers reported that needed updates to policies, procedures, and rates have been completed, but day-to-day implementation across MCEs remains somewhat uneven. Some providers, participating in a July 2024 forum, indicated inconsistency across MCEs, which causes uncertainty for providers and members. Several participating providers suggested that more training, or another mechanism to increase consistency across the MCEs, particularly for staff responsible for prior authorizations, on specific features of each ASAM level of care would improve access to care for Medicaid members. HCPF coordinated the development and facilitation of training for the MCEs that focused on the correct application of ASAM in UM practices. The training content was developed after review of the HSAG report noted above, and addressed the use of appropriate ASAM criteria for both admission and continued stay requests. It additionally reviewed special population ASAM criteria and the impact it can have on the UM process. The training was facilitated in May 2024, and UM staff from all MCEs were invited to attend. The training was then revised to function as a self-led training which is now posted on the HCPF website to ensure staff unable to attend the May 2024 training have access to the content.

Measure Summary: This measure somewhat supports Hypothesis 2 — the Demonstration will promote widespread use of Evidence-Based SUD Specific Patient Placement Criteria resulting in increased rates of identification, initiation, and engagement in treatment for OUD and other SUDs in that it details the State's efforts to implement placement criteria and to monitor ASAM placement criteria use.

Measure (CMS Metric #6): Members Receiving any SUD Treatment Service

Measure	Time Period	Data Sources	Analytic Method(s)
Number/percentage of beneficiaries receiving any SUD treatment service (CMS #6) (Denominator for percentages is Medicaid members with an SUD diagnosis)	Monthly, January 2020 to June 2023	Claims/encounters	ITS, including each demographic subgroup

[21] Health Services Advisory Group (2024). Inpatient and Residential Substance Use Disorder Service Denial Determination Analysis.

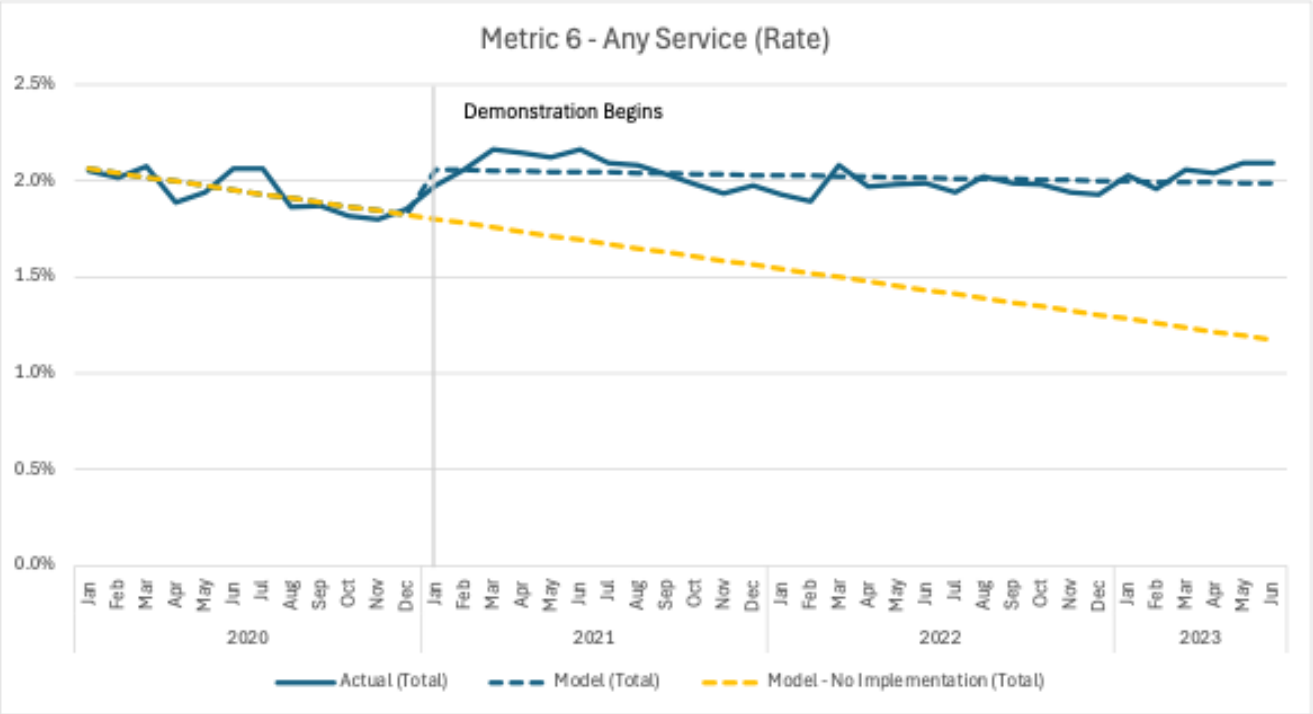


Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	22854.85	510.40	44.778	< 2e-16 ***
df$demonstration	2039.98	717.54	2.843	0.00715 **
df$time	94.43	69.35	1.362	0.18132
df$demonstration:df$time	2.09	71.52	0.029	0.97684

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 7.897e-05 on 38 degrees of freedom
Multiple R-squared: 0.7181, Adjusted R-squared: 0.6959
F-statistic: 32.27 on 3 and 38 DF, p-value: 1.526e-10



Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	2.082E-02	4.477E-04	46.511	< 2e-16 ***
df$demonstration	7.095E-05	6.293E-04	0.113	0.91083
df$time	-2.164E-04	6.082E-05	-3.558	0.00102 **
df$demonstration:df$time	1.916E-04	6.273E-05	3.054	0.00411 **

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

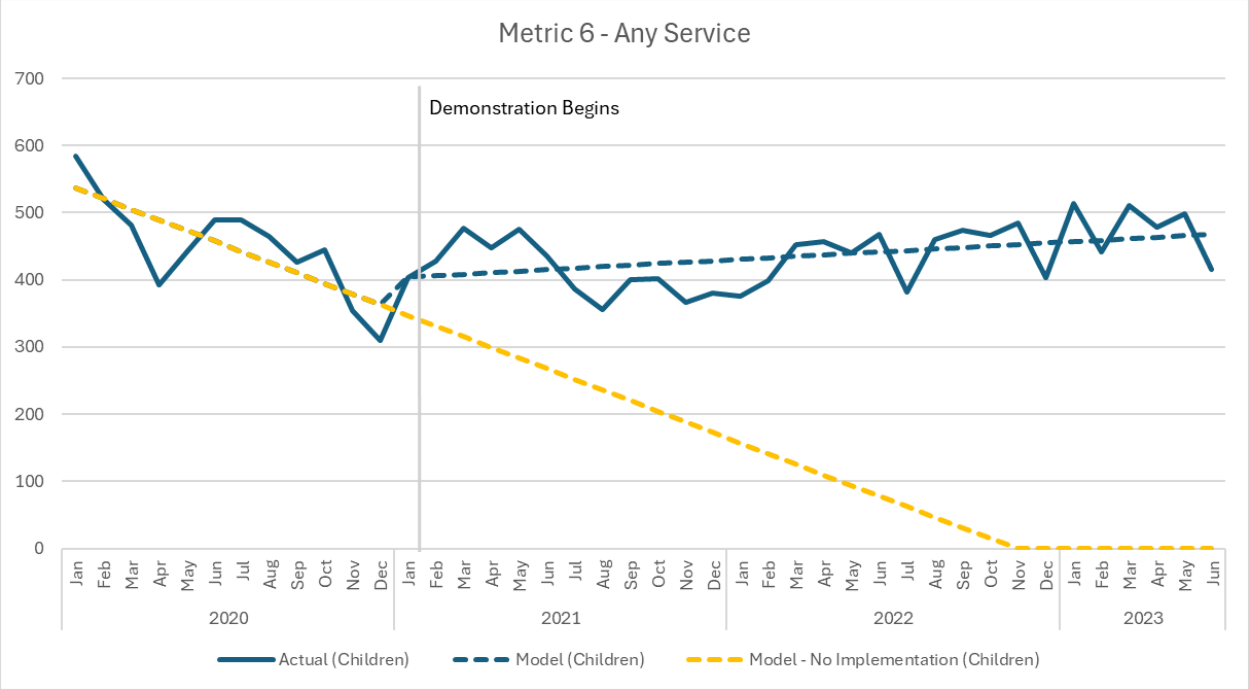
Residual standard error: 0.0007273 on 38 degrees of freedom
Multiple R-squared: 0.4018, Adjusted R-squared: 0.3545
F-statistic: 8.507 on 3 and 38 DF, p-value: 0.0001898

As shown in the chart above, there was an initial increase in the number of members receiving any SUD service. The pre-Demonstration trend was close to zero, and the slope post-Demonstration did not change. The one-time increase was a statistically significant (0.007) increase at the start of the Demonstration period. There was not significant change when the analysis was repeated using the percentage of members receiving services, rather than the count.

All SUD Services (Metric #6) by Subgroup

Trends for all but one of the subgroups mirrored findings for the total population, either showing a one-time significant increase but no significant difference in increases over the Demonstration period, or no significant differences at all. However, the trend did differ for the child population. For the child subgroup, the statistically significant pre-Demonstration trend was negative, and made a statistically significant change to a positive trend during the Demonstration period. While these changes are statistically significant and visually apparent, the model is a relatively poor fit to the data, with an adjusted R-square of only 0.36.

Metric #6: Child Subpopulation Trends



Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	552.697	26.503	20.854	< 2e-16 ***
df$demonstration	-177.024	37.259	-4.751	2.88e-05 ***
df$time	-15.825	3.601	-4.395	8.62e-05 ***
df$demonstration:df$time	18.023	3.714	4.853	2.10e-05 ***

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 43.06 on 38 degrees of freedom
Multiple R-squared: 0.4066, Adjusted R-squared: 0.3597
F-statistic: 8.679 on 3 and 38 DF, p-value: 0.0001636

Measure (CMS Metric #15): Increase in Treatment Initiation and Engagement

Metric #15 Measure	January 1–December 31, 2020	January 1–December 31, 2021	January 1–December 31, 2022	January 1–December 31, 2023	Percentage of Change
#15(a) Initiation of Alcohol or Other Drug (AOD) Treatment	36.0%	39.1%	35.7%	42.5%	+18.1%
#15(b) Engagement in AOD Treatment	63.4%	60.5%	60.0%	59.3%	- 6.5%

The increase in the rate of initiation of AOD treatment was statistically significant (X2 = 268.79; p< .05). The decrease in the rate of engagement in AOD treatment was statistically significant (X2 = 42.69; p<0.05).

The sub metrics of Metric #15 are reported below for each year of the Demonstration.

Metric		CY 2020 Rate	CY 2021 Rate	% change	CY2022 Rate	% change	CY2023 Rate	% change
1. Initiation of AOD Treatment - Alcohol abuse or dependence (rate 1, cohort 1)	Alcohol	0.2998	0.3378	12.7%	0.3125	-7.50%	0.3590	14.89%
2. Initiation of AOD Treatment - Opioid abuse or dependence (rate 1, cohort 2)	Opioid	0.3922	0.4064	3.6%	0.2827	-30.40%	0.3115	10.18%
3. Initiation of AOD Treatment - Other drug abuse or dependence (rate 1, cohort 3)	Other	0.3364	0.3687	9.6%	0.3342	-9.40%	0.4058	21.42%
4. Initiation of AOD Treatment - Total AOD abuse of dependence (rate 1, cohort 4)	Total	0.3604	0.3912	8.5%	0.3571	-8.70%	0.4247	18.94%
5. Engagement of AOD Treatment - Alcohol abuse or dependence (rate 2, cohort 1)	Alcohol	0.7025	0.6728	-4.2%	0.6998	4.00%	0.6931	-0.96%
6. Engagement of AOD Treatment - Opioid abuse or dependence (rate 2, cohort 2)	Opioid	0.7303	0.7085	-3.0%	0.7493	5.80%	0.7677	2.45%
7. Engagement of AOD Treatment - Other drug abuse or dependence (rate 2, cohort 3)	Other	0.6692	0.6522	-2.5%	0.6774	3.90%	0.6606	-2.48%
8. Engagement of AOD Treatment - Total AOD abuse of dependence (rate 2, cohort 4)	Total	0.6340	0.6045	-4.7%	0.6003	-0.70%	0.5928	-1.25%

The evaluation observed mixed findings related to initiation of and engagement in AOD treatment. While Colorado observed an 18.1% increase in the rate of initiation, engagement in treatment saw a modest reduction over time, of about 6.5% from the baseline.

Measure summary: This measure produced mixed results related to Hypothesis 2 — the Demonstration will promote widespread use of Evidence-Based SUD Specific Patient Placement Criteria resulting in increased rates of identification, initiation, and engagement in treatment for OUD and other SUDs. While initiation improved significantly between the baseline to June 2023, more progress is needed to support improved engagement in AOD Treatment.

Hypothesis 3: The Demonstration will Promote Sufficient Provider Capacity at Each Level of Care, Including MAT, for SUD/OUD, Resulting in

Increased Rates of Identification, Initiation, and Engagement in Treatment for OUD and Other SUDs

Qualitative Measure

Measure	Time Period	Data Sources	Analytic Method(s)
Description of Provider Capacity Workgroup activities	Cumulative for interim reporting period	Key Informant Interviews;[22] Document Review	Thematic analysis of interviews, policies, and contracts

All planned implementation activities for Milestone 4 (Sufficient Provider Capacity at Critical Levels of Care including for Medication Assisted Treatment for OUD) have been completed. This includes the convening of the Provider Capacity Workgroup that changed focus in April 2021 to become an implementation workgroup.

- Provider Capacity Workgroup convened in September 2019 and continued through June 2020. Workgroup changed focus to become an implementation workgroup which ended in April 2021.
- The State has completed a provider capacity assessment and is actively developing strategies to further expand provider capacity in the state.
  - BHA has begun work to upgrade the Behavioral Health Bed Tracker. Dimagi, an award-winning technology company that helps organizations deliver quality digital solutions for a variety of sectors, has been selected to help lead this effort. Developments planned for the registry include the ability for providers to send push notifications to other providers when they have a client for whom they are trying to find a bed. This work is a significant step towards tracking availability for mental health and SUD treatment beds, and BHA's broader goal to create a centralized platform for integrating and simplifying behavioral health data across the State.

As mentioned previously, the Demonstration has seen only a modest change in the number of SUD providers in the State. After a larger increase during the first year, the number of available providers fell during the second DY, with the number of providers increasing by about 4%.

Measure: Providers Participating in IT MATTRs Forums

Measure	Time Period	Data Sources	Analytic Method(s)
Number/percentage of providers participating in IT MATTRs forums. Denominator is total number of MAT providers (Metric #15)	Yearly	HCPF	Descriptive statistics (counts)

Section 1262 of the Consolidated Appropriations Act, 2023 (CAA 2023), removes the federal requirement for practitioners to submit a Notice of Intent (have an X waiver) to prescribe medications, like buprenorphine, for the treatment of OUD. Because the X waivers were eliminated by Congress

[22] Rather than individual KIIs, Mercer conducted focus groups with MCEs, State staff, providers and people receiving services. This allowed us to incorporate more perspectives than would have been available through fewer interviews.

participation data regarding the number of providers participating in IT MATTRs is not relevant and trainings have not occurred since 2022 when CAA 2023 was approved. Prior to that date, a review of quarterly monitoring reports indicated that the State had completed the X waiver provider recruitment program entitled "IT MATTTRs," but the intervention is no longer relevant to the Demonstration because of the federal legislative changes.

The State used Substance Abuse and Mental Health Services Administration (SAMHSA) State Targeted Response to the Opioid Crisis and State Opioid Response (SOR) grant funding to expand its MAT capacity. The program has provided X waiver training at no cost to providers (See Metric #14, below).

Measure (CMS Metric #13): Number of SUD Providers

Metric #13 Measure	January 1–December 31, 2020	January 1–December 31, 2021	January 1–December 31 2022	January 1–December 31, 2023	Percentage of Change
#13 Number of Providers Licensed	2,818	3,121	2,928	3,085	+9.5%

The number of providers increased during the first DY, fell slightly in DY2 (but still above the baseline level), and then increased in DY3. Most stakeholders reported that there is not always sufficient capacity within existing providers to provided needed care, particularly in rural areas and with services for specific populations, particularly children and pregnant people.

Measure Summary: This measure minimally supports Hypothesis 3 that the Demonstration will promote sufficient provider capacity at each level of care, including MAT, for SUD/OUD, resulting in increased rates of identification, initiation, and engagement in treatment for OUD and other SUDs.

Measure (CMS Metric #14): Increase in MAT Providers

Measure	Time Period	Data Sources	Analytic Method(s)
Number of providers licensed to provide MAT	Yearly, 2020–2022	Claims/encounters	Descriptive analysis

While the X waivers were still in effect, the State implemented an X waiver provider recruitment program entitled "IT MATTTRs," leveraging SAMHSA State Targeted Response to the Opioid Crisis and SOR grant funding to expand its MAT capacity.

The program provided X waiver training at no cost to providers. Funds also supported on-site practice implementation training at participating health clinics. IT MATTRs offered regular telephonic training forums where an experienced MAT provider offered real time support to new providers across the State.

The X waivers were discontinued in 2023 under Section 1262 of the CAA 2023. Today, all practitioners who have a current Drug Enforcement Administration (DEA) registration that includes Schedule III authority, may now prescribe buprenorphine for OUD in their practice if permitted by applicable State law. Starting June 27, 2023, practitioners who are applying for or renewing their DEA registration must document that they have either a total of eight hours of required training; board

certification in addition medicine or addiction psychiatry; or graduation within five years and good standing status of an acceptable medical, advanced practice nursing, or physician assistant school including eight hours of opioid or other SUD curriculum.

As shown in the table below, these initiatives have resulted in a large increase in the number of MAT providers in the State.

Metric #14: Number of MAT Providers

Metric #14 Measure	January 1–December 31, 2020	January 1–December 31, 2021	January 1–December 31, 2021	January 1–December 31, 2023	Percentage of Change
#14 Number of MAT Providers	192	277	278	262	+ 36.5%
#14 Percent of SUD Providers who are MAT Providers	6.8%	8.9%	9.5%	8.5%	+ 25.0%

The increase in the percent of all SUD providers who MAT providers was statistically significant (X2 = 5.62; p< .05).

Measure Summary: This measure supports Hypothesis 3 that the Demonstration will promote sufficient provider capacity at each level of care, including MAT, for SUD/OUD, resulting in increased rates of identification, initiation, and engagement in treatment for OUD and other SUDs.

However, these changes did not translate into increases in utilization of MAT services. Metric #12, presented in findings for Hypothesis 1, above, demonstrated that the Demonstration did not increase the use of MAT. In fact, Demonstration trends were below what was predicted had the Demonstration not been implemented. In the summative evaluation, we will verify data to see if there is a lag in the growth of MAT utilization that was delayed following the growth in the number of MAT providers.

Measure: Bed Capacity

Measure	Time Period	Data Sources	Analytic Method(s)
Total number of beds available (Bed capacity)	TBD	HCPF	Descriptive statistics

There is limited publicly available bed capacity data available. Colorado's BHA has published information through the Behavioral Health Capacity Registry on the count of beds in each county for residential facilities for which there are residential beds and a waitlist. The Registry went live on July 1, 2021; however, data is available by quarter from July 2023 through March 2024.[23] This data only shows the number of beds in operation for facilities with residential beds and for which a waitlist exists but does not show if beds were in use or vacant. Mercer will continue to work with the State to receive additional bed capacity data in order to produce descriptive statistics in the Summative Evaluation Report.

Bed Count Data

County	July 2023–September 2023	October 2023–December 2023	January 2024–March 2024
Adams	16	12	28
Arapahoe	190	98	230
Baca	19	19	19
Bent	19	19	19
Boulder	10	10	10
Denver	122	134	222
Douglas	72	36	80
Elbert	72	36	80
Jefferson	119	109	176
Larimer	28	44	28
Las Animas	19	19	19
Mesa	52	52	53
Pueblo	42	36	59
Weld	87	52	72

[23] TBehavioral Health Administration. Substance use disorder data. Available at: Substance use disorder data | Behavioral Health Administration. Access June 6, 2025.

Overview of Driver Progress

Overall, the State is making good progress towards this goal. There is a need to increase capacity for some critical levels of care. Implementation gains are beginning to translate to increases in utilization, although progress in increasing the number and percent of members initiating, engaging, and being retained in treatment is not yet evident.

Primary Driver Progress Table

Hypothesis Summary	
(1) Expand access to critical levels of care for OUD and Other SUDs.	• Results for this hypothesis were mixed. • Stakeholders generally report an increased access to critical levels of care for OUD and other SUDs. • Utilization of outpatient, IOP, WM, and residential and inpatient services increased significantly. • Utilization of early intervention did not increase. • The Demonstration appears to have led to increases in both the number of members with an IMD stay and the average length of those stays.
(2) Promote Widespread use of Evidence-Based SUD Specific Patient Placement Criteria	• Results for this hypothesis were mixed. • There have been modest increases in the number of licensed providers. Stakeholders indicated that more capacity is needed in some areas. • There was a one-time increase in the number and the rate of members receiving any SUD treatment at the start of the Demonstration. However, those increasing trends have not been sustained. • The State has completed activities implement placement criteria and to monitor ASAM placement criteria use. • The Demonstration did not have an effect on the percentage of Medicaid members who initiate AOD treatment or engagement in AOD treatment.
(3) Sufficient Provider Capacity at Each Level of Care, Including MAT, for SUD/OUD	• There was a small increase in number of providers. • There was a larger increase in number of MAT providers, and the change was not statistically significant. • These changes did not translate into increases in utilization of MAT services.

Primary Driver: Improved Access to Care for Physical Health Conditions Among Beneficiaries with OUD or Other SUDs

Hypothesis 4: The Demonstration will Improve Care Coordination for Physical Care, Resulting in Improved Access to Care for Physical Health Conditions Among Beneficiaries with OUD or Other SUDs

Qualitative Measure

Measure	Time Period	Data Sources	Analytic Method(s)
Description of MCE Care Coordination activities determined by SUD Implementation Workgroup	Cumulative for interim reporting period	Key Informant Interviews;[24] Document Review	Thematic analysis of interviews, policies, and contracts

Most Milestone 6 (Improved Care Coordination and Transitions between Levels of Care) implementation activities were executed and have ongoing activities at the time of this report. The State has approved the MCEs' updated care coordination policy drafts.

Colorado has passed legislation supporting care coordination infrastructure statewide. Additionally, the Implementation Workgroup has published recommendations for care coordination improvements in conjunction with the Colorado Health Institute. These recommendations included a tiered set of levels of care coordination, driven by a member's acuity and the complexity of treatment needs.[25] Ongoing training is continuing to occur for these implementation activities.

Most stakeholders acknowledged that these activities and resulting efforts are new and have not yet translated to the care coordination improvements envisioned by the Demonstration hypotheses. This is confirmed by the modest increases in access to preventive/ambulatory health services for adult Medicaid members with SUD, the decreasing engagement statistics noted above, the continued high and growing readmission rates as noted below, and the disproportionate percentage of the population receiving WM services relative to treatment.

Measure Summary: While milestone activities have been completed, the qualitative data does not support Hypothesis 4 — the Demonstration will improve care coordination for physical care, resulting in improved access to care for physical health conditions among beneficiaries with OUD or other SUDs.

[24] Rather than individual KIIs, Mercer conducted focus groups with MCEs, State staff, providers and people receiving services. This allowed us to incorporate more perspectives than would have been available through fewer interviews.

[25] Colorado Health Institute (2022). Bridging the Gaps Policy Recommendations to Implement a Cohesive Statewide Care Coordination Infrastructure.

Measure (CMS Metric #32): Access to Preventive/Ambulatory Health Services for Adult Medicaid Beneficiaries with SUD (AAP)

Measure	Time Period	Data Sources	Analytic Method(s)
#32 Percent of members with number of unique members with SUD with an ambulatory or preventative care visit. **Denominator is number of unique members with an SUD diagnosis (#4)**	Yearly, 2020–2022	Claims/encounters	Descriptive analysis

As shown in the table below, there were very small increases in the percentage of members with a preventative/ambulatory health service each year after Demonstration implementation. The small change is consistent with stakeholder reports that more work is needed to improve care coordination across the State. While the difference was small, it was statistically significant ($X^2 = 421.7$; $p < .05$).

Metric #32 Measure	January 1–December 31, 2020	January 1–December 31, 2022	January 1–December 31, 2023	Percentage of Change
#32 Percent of members with number of unique members with SUD with an ambulatory or preventative care visit.	84.0%	86.0%	86.3%	87.9%	+ 4.6%

Measure Summary: The measure somewhat supports Hypothesis 4 — the Demonstration will improve care coordination for physical care, resulting in improved access to care for physical health conditions among beneficiaries with OUD or other SUDs. Though changes were statistically significant (likely due to the large numbers in the population, they are relatively small) and stakeholders did not report any improvements in care coordination.

Overview of Primary Driver Progress

The State has implemented activities associated with improvements in care coordination, but stakeholders reported that improvements have not yet been achieved. The percentage of members with SUD who had an ambulatory or preventative care visit did see a modest improvement.

Primary Driver Progress Table

Hypothesis Summary	
(4) Improve Care Coordination for Physical Care, Resulting in Improved Access to Care for Physical Health Conditions.	• While milestone activities have been completed, stakeholders reported that there have not yet been improvements in care coordination. • Stakeholders report that there is not sufficient capacity at some levels of care to support continuity of care across levels of care. • The percentage of members with number of unique members with SUD with an ambulatory or preventative care visit increased slightly, this small change was statistically significant.

Primary Driver: Increased Adherence to and Retention in Treatment for OUD and Other SUDs

Hypothesis 5: The 1115 SUD Demonstration will Implement use of Nationally Recognized, Evidence-Based SUD Program Standards to set Residential Treatment Provider Qualifications Resulting in Increased Adherence to and Retention in Treatment for OUD and Other SUDs

The State has completed all implementation activities associated with Milestone 3 (Use of nationally recognized SUD specific program standards to set provider qualifications for residential treatment facilities). This included relicensing providers based on updated BHA regulations and implementation of period audits and reviews of facilities as part of this licensing process. The Department is also providing training and technical assistance to align providers with ASAM standards and updated contract language. In addition, the State has developed processes for reviewing residential treatment providers to assure compliance with these standards and has begun these reviews. Results of reviews will be available for the Summative Evaluation Report. This report does not include the first three measures for this hypothesis described in the evaluation design, as they are dependent on the review data.

Measure (CMS Metric #22): Increased Adherence and Retention in Treatment

Measure	Time Period	Data Sources	Analytic Method(s)
#22 Continuity of Pharmacotherapy for OUD	Yearly, 2020–2022	Claims/encounters	Descriptive analysis

As shown in the table below, the percentage of Medicaid members continuing pharmacotherapy for OUD decreased in the first three years of the Demonstration. This is consistent with the finding that MAT services have not increased, despite a large increase in the number of MAT providers.

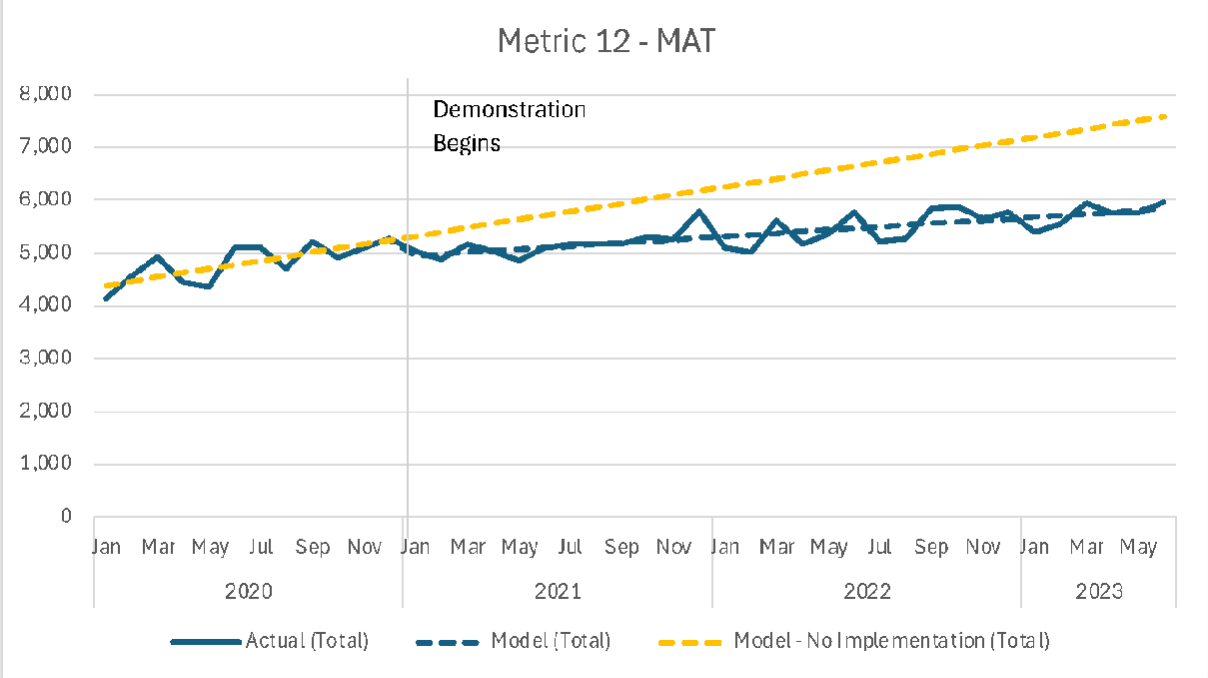
Metric #22 Measure	January 1–December 31, 2020	January 1–December 31, 2021	January 1–December 31, 2022	January 1–December 31, 2023	Percentage of Change
#22 Continuity of Pharmacotherapy for OUD	59.7%	57.6%	57.1%	56.7%	-5.0%

During a State staff focus group, some staff noted that sustaining needed services in typically underserved areas has been a challenge. Some providers closed shortly after opening in areas reporting service needs because of insufficient ongoing utilization to sustain the services despite observed community needs. “A lesson learned is that we need to be thoughtful when we establish a new program to make sure that all players are at the table. The funding source needs to be present and stable and there should be enough utilization to sustain the service resulting in a secure payment stream.”

Measure summary: The measure does not support Hypothesis 5 — the 1115 SUD Demonstration will implement use of nationally recognized, evidence-based SUD program standards to set residential treatment provider qualifications resulting in increased adherence to and retention in treatment for OUD and other SUDs.

Measure (CMS Metric #12): Members Receiving MAT through QE June 30, 2023

Measure	Time Period	Data Sources	Analytic Method(s)
#12 Number/percentage of beneficiaries who have a claim for MAT for SUD during the measurement period (CMS #12). **Denominator is Metric #3**	Monthly, January 2020 to June 2023	Claims/encounters	ITS, including each demographic subgroup

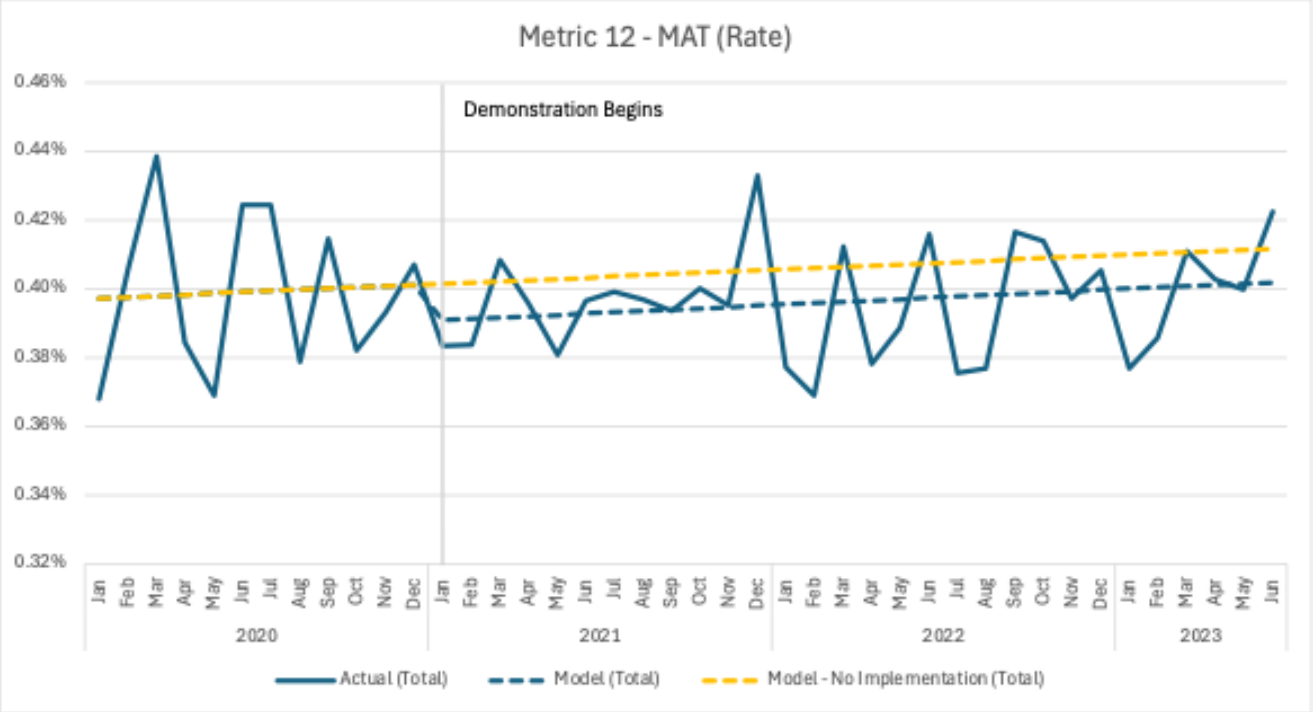


Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	4329.41	137.40	31.509	< 2e-16 ***
df$demonstration	244.29	193.16	1.265	0.213680
df$time	77.74	18.67	4.164	0.000173 ***
df$demonstration:df$time	-47.40	19.25	-2.462	0.018473 *

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 223.3 on 38 degrees of freedom
Multiple R-squared: 0.7523, Adjusted R-squared: 0.7327
F-statistic: 38.47 on 3 and 38 DF, p-value: 1.339e-11



Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	3.969E-03	1.136E-04	34.943	<2e-16 ***
df$demonstration	-1.096E-04	1.597E-04	-0.686	0.497
df$time	3.513E-06	1.543E-05	0.228	0.821
df$demonstration:df$time	2.882E-07	1.592E-05	0.018	0.986

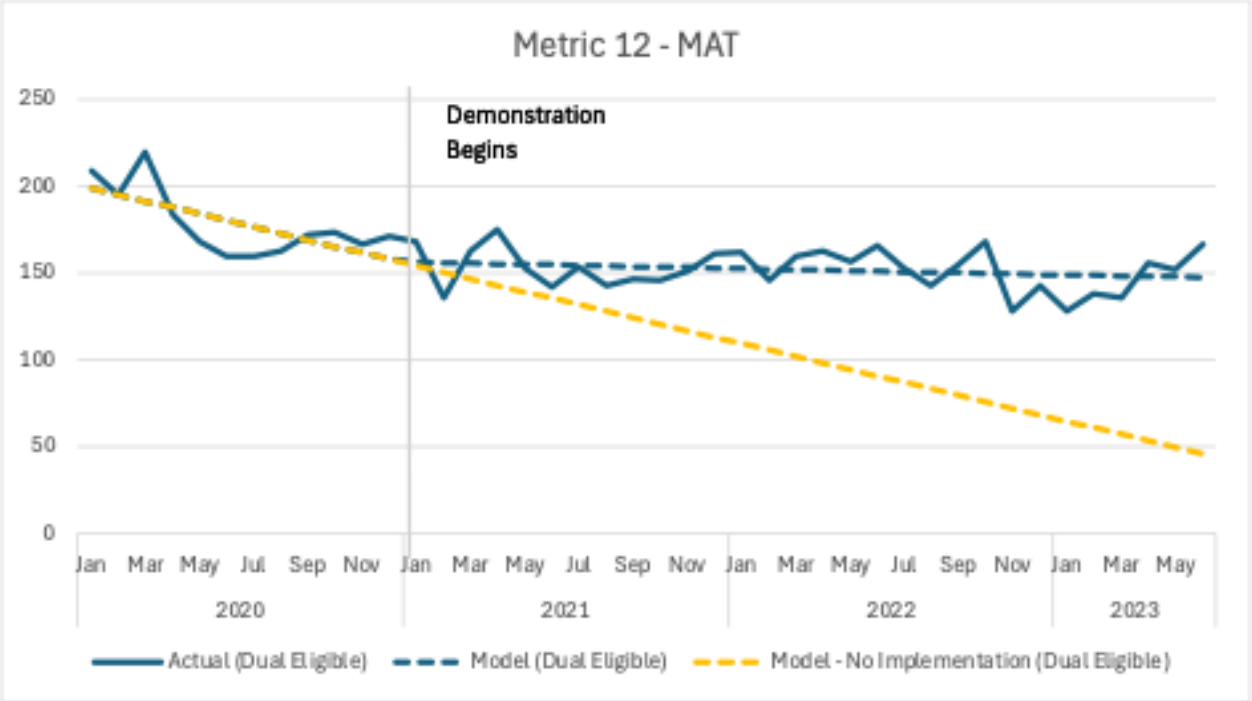
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.0001845 on 38 degrees of freedom
Multiple R-squared: 0.03064, Adjusted R-squared: -0.04589
F-statistic: 8.679 on 3 and 38 DF, p-value: 0.0001636

The trend pre-Demonstration was increasing use of about 78 members per month. With the start of the Demonstration this declined to a trend of approximately 30 additional members per month. This change was statistically significant at the 0.05 level, but not at 0.01. This trend was the same when analyzed using the proportion of members receiving services, rather than counts, although the trend for proportions was not statistically significant.

MAT Services (Metric #12) for Subgroups

Some subgroups saw different trends from the total population. Dual eligible and senior populations saw statistically significant increases in MAT services. For all other groups, trends were the same for the total population or numbers were too small for reliable analysis.

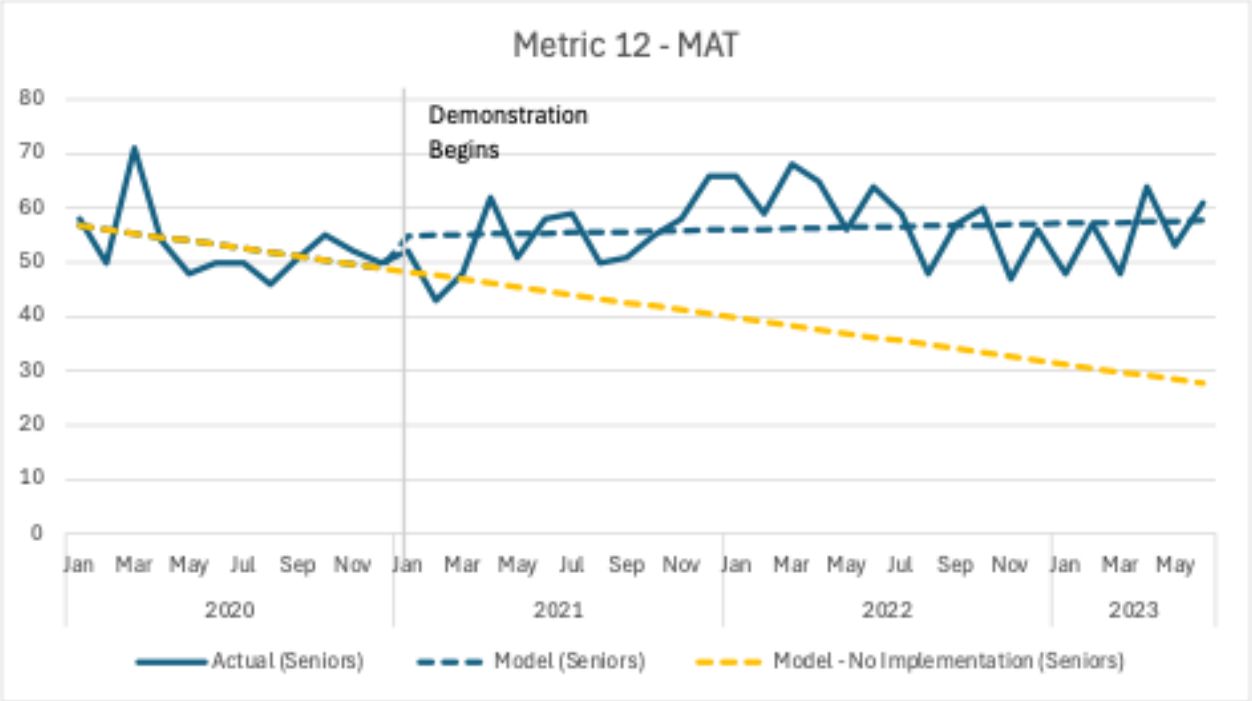


Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	202.833	7.956	25.494	< 2e-16 ***
df$demonstration	-42.501	11.185	-3.800	0.000509 ***
df$time	-3.731	1.081	-3.451	0.001383 **
df$demonstration:df$time	3.428	1.115	3.075	0.003892 **

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 12.93 on 38 degrees of freedom
Multiple R-squared: 0.5652, Adjusted R-squared: 0.5308
F-statistic: 16.46 on 3 and 38 DF, p-value: 5.157e-07



Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	57.5303	4.0664	14.148	<2e-16 ***
df$demonstration	-3.8427	5.7167	-0.672	0.506
df$time	-0.7098	0.5525	-1.285	0.207
df$demonstration:df$time	0.8048	0.5698	1.412	0.166

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 6.607 on 38 degrees of freedom
Multiple R-squared: 0.103, Adjusted R-squared: 0.03216
F-statistic: 1.454 on 3 and 38 DF, p-value: 0.2424

Measure summary: The measure does not support Hypothesis 5 — the 1115 SUD Demonstration will implement use of nationally recognized, evidence-based SUD program standards to set residential treatment provider qualifications resulting in increased adherence to and retention in treatment for OUD and other SUDs.

Hypothesis 6: The 1115 SUD Demonstration will Improve Care Coordination and Transitions Between Levels of Care Resulting in Increased Adherence to and Retention in Treatment for OUD and Other SUDs

Qualitative Measures

Measure	Time Period	Data Sources	Analytic Method(s)
Description of activities to enhance care through the Implementation Workgroup	Cumulative for interim reporting period	Key Informant Interviews;[26] Document Review	Thematic analysis of interviews, policies, and contracts
MCE policy development to ensure adequate care coordination across the SUD continuum	Cumulative for interim reporting period	Key Informant Interviews;[27] Document Review	Thematic analysis of interviews, policies, and contracts

As previously discussed, work to improve care coordination is ongoing. While implementation activities have been achieved, stakeholders reported that care coordination remains an area where the State should continue to make improvements.

Most stakeholders did not feel that care coordination had improved. They noted a new opportunity with the release of the Request for Proposal (RFP) for the new Accountable Care Collaborative that includes a more robust care coordination requirement in MCE contracts.

Based on monitoring reports, activities continue to work toward better care coordination. “Bridging the Gaps: Policy Recommendations to Implement a Cohesive Statewide Care Coordination Infrastructure” was published and provides recommendations to inform the BHA on implementation of statewide care coordination.[28] Recommendations in that 2022 report include:

- Creating a shared definition for care coordination services.
- Supporting care coordination infrastructure including a statewide navigation hub and regional connection centers, and care coordination entities.
- Care transitions should be required through warm hand-off between regional connection centers, navigators, and care coordination entities.
- Standards of care should be established to support consistent, high-quality care coordination services across the State.
- Credentials for providing care coordination services should be established to ensure that Coloradoans receive consistent, high-quality services from a trained workforce.
- Payment and accountability models should ensure that statewide care coordination infrastructure is appropriately funded and that there is buy-in from other State agencies and organizations

[26] Rather than individual KIIs, Mercer conducted focus groups with MCEs, State staff, providers and people receiving services. This allowed us to incorporate more perspectives than would have been available through fewer interviews.

[27] Ibid.

[28] Colorado Health Institute Informing Strategy, Advancing Health. Bridging the Gaps Policy Recommendations to Implement a Cohesive Statewide Care Coordination Infrastructure. June 2022. Available at: https://drive.google.com/file/d/10Hr4COOkQ856QmQWeVj4VuAssFLTWHyG/view

utilizing the infrastructure to ensure a holistic, person-and family-centered system of care and accountability for serving all Coloradans.

Additionally, a new law (SB22-177 Investments in Care Coordination Infrastructure signed May 25, 2022) requires improved care coordination infrastructure.

Measure (CMS Metric #17): Percentage of ED Visits for which the Beneficiary Received Follow-Up

Measure	Time Period	Data Sources	Analytic Method(s)
#17-1 Number of ED visits for members in the denominator who had a follow-up visit for AOD abuse or dependence within 30 days and 7 days	Yearly, 2020–2022	Claims/ encounters	Descriptive analysis; Chi-Square pre-post change
#17-2 Number of ED visits for members with a principal diagnosis of mental illness or intentional self-harm and who had a follow-up visit for mental illness within 30 days and 7 days	Yearly, 2020–2022	Claims/ encounters	Descriptive analysis; Chi-Square pre-post change

Demonstration results for follow-up after ED visits are mixed. While follow-ups occurring within 30 days increased during the Demonstration period. These increases were statistically significant at the p< .01 level using Chi-Square tests. However, follow-ups occurring within seven days decreased, but only significantly for mental illness. This suggests that additional efforts to transition members into community-based care immediately following ED visits is needed.

Metric #17 Measure	January 1–December 31, 2020	January 1–December 31, 2021	January 1–December 31, 2022	January 1–December 31, 2023	Percentage of Change
#17-1a Percentage of ED visits for which the beneficiary received follow-up within 30 days of the ED visit (31 total days)	12.5%	23.2%	21.4%	17.0%	+36.0%
#17-1b Percentage of ED visits for which the beneficiary received follow-up within 7 days of the ED visit (8 total days)	20.0%	15.6%	15.1%	18.8%	-6.0%

Metric #17 Measure	January 1–December 31, 2020	January 1–December 31, 2021	January 1–December 31, 2022	January 1–December 31, 2023	Percentage of Change
#17-2a Percentage of ED visits for mental illness for which the beneficiary received follow-up within 30 days of the ED visit (31 total days)	18.9%	34.0%	30.2%	26.6%	+40.7%
#17-2b Percentage of ED visits for mental illness for which the beneficiary received follow-up within 7 days of the ED visit (8 total days)	29.5%	24.6%	22.4%	18.8%	-36.3%

Measure summary: The measure provides some support for Hypothesis 5 — the 1115 SUD Demonstration will implement use of nationally recognized, evidence-based SUD program standards to set residential treatment provider qualifications resulting in increased adherence to and retention in treatment for OUD and other SUDs.

Overview of Driver Progress

Progress made

Driver Progress Table

Hypothesis Summary	
(5) Implement use of Nationally Recognized, Evidence-Based SUD Program Standards to set Residential Treatment Provider Qualifications	• The percentage of members continuing pharmacology for OUD decreased during the first three DYs. • The number and rate of members receiving MAT did not significantly increase during the first three DYs.
(6) Improve Care Coordination and Transitions Between Levels of Care	• While care coordination implementation activities are complete, stakeholders reported that care coordination remains an area where the State should continue to make improvements. • Follow-ups for ED visits occurring within 30 days increased during the Demonstration period. These increases were statistically significant. However, follow-ups occurring within 7 days decreased. This suggests that additional efforts to transition members into community-based care immediately following ED visits is needed.

Primary Driver: Reduction in Overdose Deaths, Particularly those Due to Opioids

Hypothesis 7: The Demonstration will Implement Comprehensive Treatment and Prevention Strategies to Address Opioid Abuse and OUD, as well as Recruit and Train More Providers to Provide MAT, Resulting in a Reduction in Overdose Deaths

Metric #14: Number of MAT Providers

Metric #14 Measure	January 1–December 31 0, 2020	January 1–December 31 , 2021	January 1–December 31 , 2022	January 1–December 31 , 2023	Percentage of Change
#14 Number of MAT Providers	192	277	278	262	+44.8%
#14 Percent of SUD Providers who are MAT Providers	6.8%	8.9%	9.5%	8.5%	+25%

There was a 44.8% increase in the number of MAT providers in the State. At the same time, CO also experienced an increase in SUD providers, increasing from 2,818 providers in the baseline period to 3,085 providers by June 2023. This represents a 9.5% increase in SUD providers overall. There was also a corresponding statistically significant 25% increase in the proportion of CO's SUD providers that provide MAT from the baseline to June 2023, suggesting an overall increase in the availability of MAT during the Demonstration period($X^2 = 5.61$; $p<.05$).

The State continues to identify opportunities for expanding Prescription Drug Monitoring Program (PDMP) functionality and use and continues to increase the use of PDMP by providers and pharmacists. In the table below, the Health Information Technology (HIT) action items and status are listed.

Qualitative Measure

Measure	Time Period	Data Sources	Analytic Method(s)
Key informant reports on Implementation of opioid prescribing guidelines, including HIT activities	Cumulative for interim reporting period	Key Informant Interviews;[29] Document Review	Thematic analysis of interviews, policies, and contracts

[29] Rather than individual KIIs, Mercer conducted focus groups with MCEs, State staff, providers and people receiving services. This allowed us to incorporate more perspectives than would have been available through fewer interviews.

Status of Milestone Five Health Information Technology Activities Under the Demonstration

Implementation Plan		Status
PDMP Functionalities		
Enhanced interstate data sharing in order to better track patient specific prescription data	• Data sharing with additional states will be pursued, but data sharing agreements are contingent on other states' processes and policies for interstate data sharing. • Security enhancements for the State's integrated users are being pursued, which will require all integrated users to be validated against the State PDMP (PMP AWARE) user account list to successfully access the PDMP through an integrated connection (direct electronic health record [EHR] connection, e-prescribing software, Health Information Exchange [HIE] connection). • Expanded interstate access for integrated healthcare entities leveraging reciprocal agreements with other states to approve out-of-state healthcare entities for PMP Gateway access will be pursued once the security enhancements are implemented.	Ongoing

Implementation Plan		Status
Enhanced "ease of use" for prescribers and other state and federal stakeholders	• Prescribers and pharmacies will continue to integrate their electronic health technology with the PDMP. — Integration mini grants were offered in Fall 2020 to cover the planning and/or implementation costs of PDMP integration, funded by Overdose Data to Action grant (CDPHE is recipient, DORA is sub-recipient through an interagency agreement). Organizations in rural or high-burden counties will receive higher priority in the application scoring process.	Ongoing
Enhanced connectivity between the State's PDMP and statewide, regional or local HIE	• Other state HIEs may be considered for interstate access, subject to other states'	Ongoing

Implementation Plan		Status
	HIEs requesting access, confirmation that other state HIEs do not download or store PDMP data, and the development of a reciprocal framework for approval of out-of-state integrated healthcare entities once the State implements security enhancements for PMP Gateway integrations.	
Enhanced identification of long-term opioid use directly correlated to clinician prescribing patterns (see also "Use of PDMP" #2 below)	• Additional enhancements may require legislative or rule changes.	Completed
Current and Future PDMP Query Capabilities		
Facilitate the State's ability to properly match patients receiving opioid prescriptions with patients in the PDMP (i.e., the State's Master Patient Index [MPI] strategy with regard to PDMP query)	• Further enhancements are not being considered at this time.	Completed
Use of PDMP — Supporting Clinicians with Changing Office Workflows/Business Processes		
Develop enhanced provider workflow/business processes to better support clinicians in accessing the PDMP prior to prescribing an opioid or other controlled substance to address the issues which follow	• Further enhancements are not being considered at this time; however, PDMP integration mini-grants will reimburse approximately 25–30 healthcare organizations with integration implementation costs.	Completed
Develop enhanced supports for clinician review of patients' history of controlled substance prescriptions provided through the PDMP — prior to the issuance of an opioid prescription	• Further enhancements are not being considered at this time; however, expanding PDMP access to delegates allows staff working for prescribers to access PDMP reports on the provider's behalf and competitive PDMP integration mini-grants will reimburse healthcare organizations with integration implementation costs in the near future. • Additionally, the Board has approved over 230 PMP Gateway licenses for State healthcare organizations, covering over 700 facilities in their requests for integration, which continues to increase	Completed

Implementation Plan		Status
	depending on facility/practice needs and funding.	
Master Patient Index/Identity Management		
Enhance the MPI (or master data management service, etc.) in support of SUD care delivery	• Additional enhancements to the PDMP beyond the current State may require legislative or other changes.	Completed
Overall Objective for Enhancing PDMP Functionality and Interoperability		
Leverage the above functionalities, capabilities, and supports (in concert with any other State health IT, TA, or workflow effort) to implement effective controls to minimize the risk of inappropriate opioid overprescribing and to ensure that Medicaid does not inappropriately pay for opioids	• Additional enhancements to the PDMP beyond the current state may require legislative or other changes.	Completed

Colorado is continuing to enhance interstate data sharing; to enhance "ease of use" for prescribers and other State and federal stakeholders; and to enhance connectivity between the state's PDMP and statewide, regional or local HIE.

In addition, the Harm Reduction Workgroup completed planned activities related to developing naloxone training videos, planning educational trainings for pharmacists around safe opioid prescribing, overdose awareness, and naloxone dispensing, and broadening syringe access throughout the State.

Measures summary: Qualitative data analyzed supports Hypothesis 7 — the Demonstration will implement comprehensive treatment and prevention strategies to address opioid abuse and OUD as well as recruit and train more providers to provide MAT, resulting in a reduction in overdose deaths.

Measure: Naloxone Purchasing and Distribution

Measure	Time Period	Data Sources	Analytic Method(s)
Number/percentage of State organizations who distribute naloxone	Yearly, 2020–2022	Claims/encounters	Descriptive analysis[30]

[30] Pre-post analysis will be included in the Summative Evaluation Report when more data points are available.

After 2.5 years of implementation, the Demonstration has made progress in efforts to reduce opioid deaths through increased use of naloxone. As of this reporting period, the State has:

- Distributed 382,002 doses of naloxone statewide.
- Provided naloxone to 507 entities across the State.
- Increased the number of entities participating by 91% over 2022 numbers.
- Increased the number of doses distributed by 202% over 2022 numbers.

Measures summary: This measure supports Hypothesis 7 — the Demonstration will implement comprehensive treatment and prevention strategies to address opioid abuse and OUD, as well as recruit and train more providers to provide MAT, resulting in a reduction in overdose deaths. However, as shown above, while these initiatives have resulted in a large increase in the number of MAT providers in the State (Metric #14), these changes did not translate into increases in MAT services. Demonstration trends were below what was predicted had the Demonstration not been implemented.

HIT Measures: PDMP Use and Utilization of Opioids

Measure	Time Period	Data Sources	Analytic Method(s)
Number of providers using the PDMPs and number of opioid prescriptions	Yearly, 2020–2022	Claims/encounters	Descriptive analysis; Chi-Square test for pre-post change
Use of opioids at high dosage in persons without cancer (OHD-AD) (CMS#18)	Yearly, 2020–2022	Claims/encounters	Descriptive analysis
Use of opioids at high dosage in persons without cancer (OHD-AD) (CMS#18)	Yearly, 2020–2022	Claims/encounters	Descriptive analysis
Concurrent use of opioids and benzodiazepines (COB-AD) (CMS#21)	Yearly, 2020–2022	Claims/encounters	Descriptive analysis

Measure	Time Period	Data Sources	Analytic Method(s)
Overdose Deaths (rate) (CMS#27) Denominator is all Medicaid members	Yearly, 2020–2022	Claims/encounters	Descriptive analysis; Chi-Square test for pre-post changes

During the first 3 DYs, the number of PDMP users increased by 30.4% over baseline. This use of PDMP users helped contribute to a corresponding decrease in the concurrent use of opioids and benzodiazepines by 23.6% and a decrease in the overall number of opioid prescriptions (excluding buprenorphine) dispensed (-11.1%). However, the growth in the PDMP users and other State initiatives did not have the desired effect on use of opioids at high dosage, which increased by 26.9% during the period, despite the hypothesis that the Demonstration would decrease it. The Evaluation Design proposed also assessing the percent of providers using the PMDP, however, the

evaluator was unable to identify a consistent data source for the number of overall providers for all years in Colorado during the evaluation period. As such, the evaluator included analyses of two additional measures: (1) Active Dispensers, defined as the number of dispensers in the PDMP who reported at least one prescription and (2) Opioid Dispensing Intensity (Opioids Prescriptions per Active Dispenser). The Opioid Dispensing Intensity measures how many opioid prescriptions each dispenser issued during the period, and helps assess the PDMP's impact on dispensing patterns. From baseline to DY3, Colorado observed a 16.7% reduction in opioid dispensing intensity, suggesting that dispensing became less concentrated. This decrease in concentration aligns with the Demonstration's overall goals, as high concentration dispensing has historically been a warning sign of inappropriate dispensing and "pill mill" behavior.ed a 16.7% reduction in opioid dispensing intensity, suggesting that dispensing became less concentrated. This decrease in concentration aligns with the Demonstration's overall goals, as high concentration dispensing has historically been a warning sign of inappropriate dispensing and "pill mill" behavior.

Metric # Measure	January 1, 2020–December 31, 2020	January 1, 2021–December 31, 2021	January 1, 2022–December 31, 2022	January 1, 2023–December 31, 2023	Percentage of Change
Number of providers using the PDMP	44,340	45,230	50,278	57,811	+30.4%[31]
Active Dispensers	1,120	1,136	1,166	1,194	+6.6%[32]
Opioid Dispensing Intensity (Opioid prescriptions per Active Dispenser)	2741.4 per active dispenser	2600.3 per active dispenser	2420.19 per active dispenser	2284.83 per active dispenser	-16.7%[33]
Number of opioid prescriptions dispensed in Colorado (excluding buprenorphine)	3,070,345	2,953,884	2,821,936	2,728,086	-11.1%[34]
#18 Use of opioids at high dosage in persons without	9.3%	9.0%	10.7%	11.8%	+26.9%[35]

[31] - Cannot perform hypothesis testing on count data.

[32] Cannot perform hypothesis testing on count data.

[33] Statistically significant. Rate Ratio $_{2020/2023}$ = 1.2; p<.05

[34] ~~Statistically significant. X^2=372.76; p< .05.~~Cannot perform hypothesis testing on count data.

[35] Statistically significant. X^2=54.90; p< .05.

Metric # Measure	January 1, 2020–December 31, 2020	January 1, 2021–December 31, 2021	January 1, 2022–December 31, 2022	January 1, 2023–December 31, 2023	Percentage of Change
cancer (OHD-AD)					
#21 Concurrent use of opioids and benzodiazepines (COB-AD)	14.4%	13.2%	11.8%	11.0%	-23.6%[36]
#27 Overdose Deaths (rate per 1000)	0.397	0.403	0.508	0.281	-25.0%[37]

During the first 3 DYs, the number of PDMP users increased by 30.4% over baseline. This use of PDMP users helped contribute to a corresponding decrease in the concurrent use of opioids and benzodiazepines by 23.6% and a decrease in the overall number of opioid prescriptions (excluding buprenorphine) dispensed (-11.1%). However, the growth in the PDMP users and other State initiatives did not have the desired effect on use of opioids at high dosage, which increased by 26.9% during the period, despite the hypothesis that the Demonstration would decrease it.

Measures summary: The HIT measures results are mixed. There is some support for Hypothesis 7 — the Demonstration will implement comprehensive treatment and prevention strategies to address opioid abuse and OUD as well as recruit and train more providers to provide MAT, resulting in a reduction in overdose deaths.

Between the baseline and the post-demonstration period observed so far, CO observed a statistically significant 25% reduction in overdose deaths, indicating a meaningful improvement in SUD outcomes that may be associated with the SUD demonstration's activities. The decline supports hypotheses that the SUD Demonstration's strategies can be effective in addressing overdose risks.

Overview of Driver Progress

The Demonstration has seen increases in MAT providers, but this has not translated to people receiving MAT services. The State has implemented most opioid-use reduction activities and has thus far seen a 4.4% reduction in overdose deaths.

[36] Statistically significant. X^2=88.30; p< .05.

[37] Statistically significant. X^2=27.89; p< .05.

Driver Progress Table

Hypothesis Summary	
(7) Implement Comprehensive Treatment and Prevention Strategies to Address Opioid Abuse and OUD, as well as Recruit and Train More Providers to Provide MAT, Resulting in a Reduction in Overdose Deaths.	• There was a large increase in the number of MAT providers in the State. However, this was largely driven largely by the increase in SUD providers overall. The increase in the percent of all SUD providers who are MAT providers was statistically significant. • The State continues to identify opportunities for expanding PDMP functionality and use and continues to increase the use of PDMP by providers and pharmacists. • Most Milestone Five Health Information Technology Activities under the Demonstration have been completed and the rest are ongoing. • During the first three years of the Demonstration, there were improvements in most opioid utilization metrics, and particularly, a significant reduction in opioid related deaths.

Primary Driver: Reduced Readmissions to the Same or Higher Level of Care Where Readmission is Preventable or Medically Inappropriate for OUD and Other SUD

Hypothesis 8: The Demonstration will Lead to Widespread Use of Evidence-Based SUD Specific Patient Placement Criteria Resulting in Reduced Readmissions to the Same or Higher Level of Care where Readmission is Preventable or Medically Inappropriate for OUD and Other SUD

Qualitative Measure

Measure	Time Period	Data Sources	Analytic Method(s)
MCE development of utilization management policies and procedures and State review of UM policies and procedures. **Internal monitoring of benefit by Initial Monitoring Team**	Cumulative for interim reporting period	Key Informant Interviews;[38] Document Review	Thematic analysis of interviews, policies, and contracts

As discussed previously, the State has completed all activities associated with Milestone 2 (Use of Evidence based, SUD specific Patient Placement Criteria). This has included the development of UM policies and procedures. Providers reported that these UM practices could be improved through

[38] Rather than individual KIIs, Mercer conducted focus groups with MCEs, State staff, providers and people receiving services. This allowed us to incorporate more perspectives than would have been available through fewer interviews.

greater training and technical assistance, which they hope will improve consistency across the MCEs.

Measure (CMS) Metric #25: Readmissions

Measure	Time Period	Data Sources	Analytic Method(s)
Readmissions Among Beneficiaries with SUD (CMS #25).	Yearly, 2020–2022	Claims/encounters	Descriptive analysis; Chi-Square test for pre-post change[39]

While the Demonstration was intended to reduce readmissions, the rate increased 11.2% between baseline and the second DY.

Metric #25 Measure	January 1–December 31, 2020	January 1–December 31, 2021	January 1–December 31, 2022	January 1–December 31, 2023	Percentage of Change
#25 Readmissions Among Beneficiaries with SUD	17.0%	18.8%	19.1%	18.9%	+11.2%

This outcome seems to support the metrics related to follow-up after ED use (Metric #17 above) that follow-up after ED visits, as well as other ambulatory follow-up following hospitalizations is not occurring at the frequency needed to retain members in care and prevent readmissions. Retention in care and care coordination to lower levels of care do not seem to be occurring at the levels hoped for under the Demonstration, resulting in high readmissions among members leaving hospitalizations.

Measure summary: This measure does not support Hypothesis 8 — the Demonstration will lead to widespread use of Evidence-Based SUD Specific Patient Placement Criteria resulting in reduced readmissions to the same or higher level of care where readmission is preventable or medically inappropriate for OUD and other SUD.

Overview of Driver Progress

Findings indicate that the State needs to continue efforts to reduce readmissions to the same or higher levels of care. Stakeholders saw opportunities for improvement across MCEs in UM practices.

Driver Progress Table

Hypothesis Summary	
(8) Widespread Use of Evidence-Based SUD Specific Patient Placement Criteria Resulting in Reduced	• Development of UM policies and procedures is complete. Providers reported that these UM practices could be improved through greater training and technical assistance, which they hope will improve consistency across the MCEs.

[39] Tests of statistical significance were performed only if the metric moved in the hypothesized direction.

Hypothesis Summary	
Readmissions to the Same or Higher Level of Care	• Readmissions have increased in the first three DYs.

Primary Driver: Reduced Utilization of EDs and Inpatient Hospital Settings for OUD and Other SUD Treatment where the Utilization is Preventable or Medically Inappropriate through Improved Access to Other Continuum of Care Services

Hypothesis 9: The Demonstration will Lead to Widespread Use of Evidence-Based SUD Specific Patient Placement Criteria Resulting in Reduced Utilization of EDs and Inpatient Hospital Settings for OUD and Other SUD Treatment where the Utilization is Preventable or Medically Inappropriate

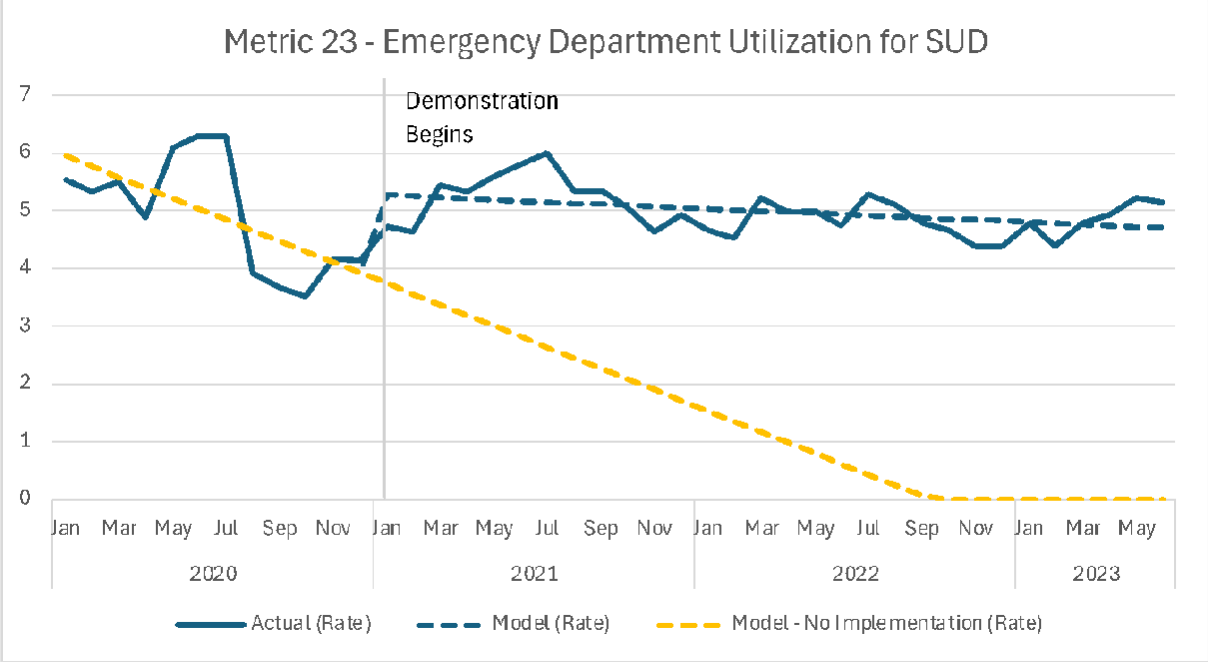
Ultimately, the Demonstration intends to improve member outcomes. As discussed previously, a small decrease in overdose deaths was observed across the first 2.5 years. However, other outcomes of reduced utilization of EDs and inpatient hospitalization have not been realized.

Measure (CMS Metrics #23 and #24): ED Utilization and Inpatient Hospitalizations

Measure	Time Period	Data Sources	Analytic Method(s)
ED Utilization for SUD per 1,000 Medicaid Beneficiaries (CMS #23)	Monthly, Jan 2020 to June 2023	Claims/encounters	ITS, including each demographic subgroup
Inpatient Stays for SUD per 1,000 Medicaid Beneficiaries (CMS #24)	Monthly, Jan 2020 to June 2023	Claims/encounters	ITS, including each demographic subgroup

The following graph shows changes in ED utilization after Demonstration implementation, compared to the pre-Demonstration period.

Metric #23: ED Utilization for SUD per 1,000 Members through QE June 30, 2023



Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	6.13700	0.33299	18.430	< 2e-16 ***
df$demonstration	-0.61182	0.46813	-1.307	0.199081
df$time	-0.18385	0.04524	-4.063	0.000234 ***
df$demonstration:df$time	0.16455	0.04666	3.526	0.001118 **

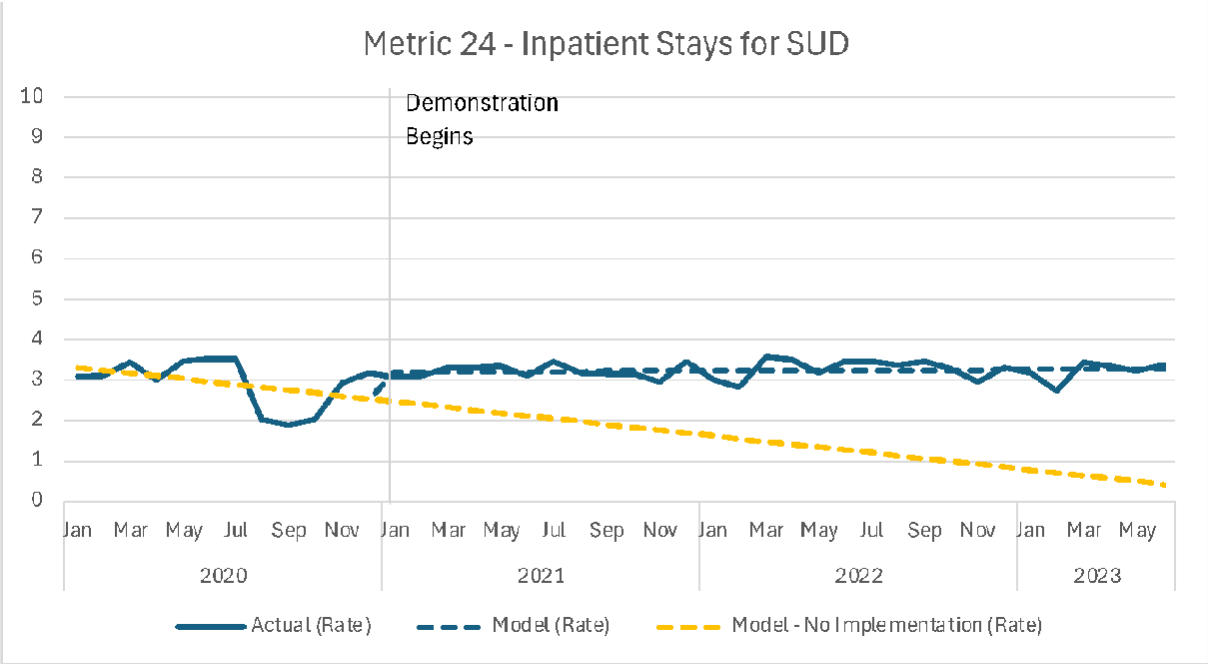
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.541 on 38 degrees of freedom
Multiple R-squared: 0.3386, Adjusted R-squared: 0.2863
F-statistic: 6.484 on 3 and 38 DF, p-value: 0.001186

The pre-Demonstration trend was for a decrease in the rate of SUD ED use over time. Post-Demonstration there was a statistically significant increase in the ED rate from negative 0.18 to very close to zero. This suggests the Demonstration resulted in an increased use of the ED for the target population as compared to the pre-Demonstration trend. This trend is contrary to the goals of the Demonstration and suggests that additional initiatives to prevent additional ED visits are needed.

The following graph shows changes in inpatient stays per 1,000 after Demonstration implementation, compared to the pre-Demonstration period.

Metric #24: Inpatient Stays for SUD per 1,000 Medicaid Members through QE June 30, 2023



Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	3.39459	0.21506	15.785	<2e-16 ***
df$demonstration	-0.20310	0.30233	-0.672	0.5058
df$time	-0.07039	0.02922	-2.409	0.0210 *
df$demonstration:df$time	0.07249	0.03014	2.406	0.0211 *

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.3494 on 38 degrees of freedom
Multiple R-squared: 0.251, Adjusted R-squared: 0.1919
F-statistic: 4.245 on 3 and 38 DF, p-value: 0.01108

As in the previous ED graph, the statistically significant decreasing trend in inpatient utilization ended at the start of the Demonstration. The Demonstration trend was essentially flat. This could be interpreted as an increase in inpatient use relative to the pre-Demonstration declining trend. Given the visible pre-Demonstration variability, the Demonstration appears to have reduced variability rather than changed any obvious trend. See the adjusted R square for a measure of the imprecision of the model. Some of this post-Demonstration change could be related to the coverage of hospital IMDs which might have stabilized the total number of SUD hospital beds available in the system after the Demonstration implementation. However, the overall trend of increasing inpatient utilization with the Demonstration is not consistent with the goals of the program.

Measures summary: These two measures do not support Hypothesis 9 — the Demonstration will lead to widespread use of Evidence-Based SUD Specific Patient Placement Criteria resulting in

reduced utilization of EDs and inpatient hospital settings for OUD and other SUD treatment where the utilization is preventable or medically inappropriate.

Hypothesis 10: The Demonstration will Improve Outcomes for Members Using SUD Services with Similar or Lower Service Costs

Under this hypothesis, the State is determining if the improved access to SUD residential and hospital services in IMDs will result in improved outcomes for members using SUD services with similar or lower service cost.

The Evaluation Design called for three sets of metrics to be utilized for this analysis.

Cost Analysis 1: Annual Aggregate Costs

The table below utilizes the annual aggregate cost metrics under the Demonstration.

Cost Analysis 1: Annual Aggregate Costs

Metric	2020	2021	2022
Total SUD spending (CMS #28) is the sum of all Medicaid spending on SUD treatment services[40]	$70,446,962.84	$82,762,731.53	$97,451,713.99
SUD spending within IMDs (CMS #29). The sum of all Medicaid spending on inpatient/residential treatment for SUD provided within IMDs[41]	$76,981.24	$1,151,619.16	$2,076,975.73
Per capita SUD spending (CMS #30). The sum of all Medicaid spending on SUD treatment services (CMS #28) divided by the annual number of unique members with a SUD diagnosis (CMS #4)[42]	$704.15	$755.93	$824.51
Per capita SUD spending within IMDs (CMS #31). The sum of all Medicaid spending on inpatient/residential treatment for SUD provided within IMDs (CMS #29) divided by the number of members with a claim for inpatient/residential treatment for SUD in an IMD[43]	$151.84	$1,766.29	$3,113.91

[40] SUD spending for Metric #6 = CMS Metric #28.

[41] SUD spending for Metric #36 = CMS Metric #29.

[42] There were 10,045 unique Medicaid members with an SUD diagnosis in 2020, 109,484 in 2021, and 118,193 in 2022.

[43] There were 507 IMD residents in 2020, 652 IMD residents in 2021, and 667 IMD residents in 2022.

The total SUD spending grew after the implementation of the Demonstration by $27 million. The SUD IMD expenditures grew from almost $77,000 to over $2 million after the Demonstration. The per capita SUD spending under the Demonstration grew from $704 to $824 annually at the same time the annual number of unique Medicaid members with a SUD diagnosis served by Medicaid grew from 100,045 to 118,193. The per capita IMD spending under the Demonstration grew from $151 to $3,113 annually at the same time that data also reported separately that the number of members served in IMDs grew from 507 to 667.[44]

Cost Analysis 2: Medicaid SUD Treatment Costs Versus Non-SUD Treatment Costs for Members with SUD Diagnoses

In the analysis above, we utilized the unique number of members with an SUD diagnosis. The table below shows the actual number of member months where one of those individuals received Medicaid services and had an SUD diagnosis. The number of members served in a month grew from 847,738 member months prior to the Demonstration to 1,007,699 member months

Cost Analysis 2: Total Annual Member Months for Members with a SUD Diagnosis

Metric	2020	2021	2022
Total annual member months for members with a SUD diagnosis (Metric #3)	847,738	937,806	1,007,699

Mercer has also looked at the total spending under Medicaid for all members with an SUD diagnosis to see that the amount of Medicaid spending on members with SUD diagnoses is substantially less than the amount of SUD spending on those same members. The amount of IMD spending is also considerably less than the non-IMD SUD spending.

The table below outlines the total Medicaid costs for members with a SUD diagnosis by year by type of spending.

Cost Analysis 2: Total Medicaid Costs for Members with a SUD Diagnosis by Year and Type of Spending

Metric	2020	2021	2022
IMD SUD Spending	$76,981	$1,151,619	$2,076,976
Non-IMD SUD Spending	$70,369,982	$81,611,112	$95,374,738
Medicaid spending on non-SUD treatment services	$1,456,170,046	$1,818,975,043	$2,183,041,135
Total Medicaid cost per month for members with a SUD diagnosis (including pharmacy)	$1,526,617,009	$1,901,737,774	$2,280,492,849

[44] Metric #5 reported the number of members served annually in IMDs.

The table below outlines the total per member per month (PMPM) Medicaid costs for all members with a SUD diagnosis by year utilizing the number of person months that individuals are receiving services under Medicaid.

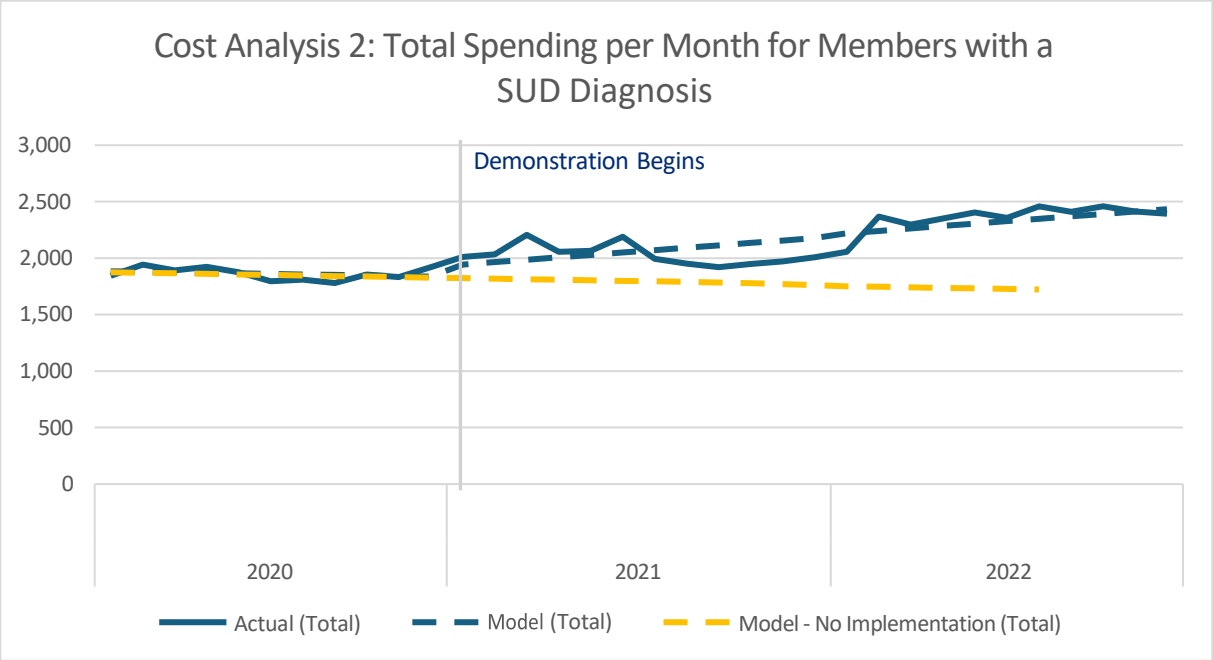
Cost Analysis 2: Total PMPM Medicaid Costs for All Members with a SUD by Year

Metric	2020	2021	2022
IMD PMPM Spending for individuals with SUD diagnosis	$0.09	$1.23	$2.06
Non-IMD SUD PMPM Spending	$83.01	$87.02	$94.65

Metric	2020	2021	2022
PMPM of all Medicaid spending on non-SUD treatment services	$1,717.71	$1,939.61	$2,166.36
Total Cost PMPM	$1,800.81	$2,027.86	$2,263.07

The graph below shows the total spending per month for members with a SUD diagnosis.[45]

Cost Analysis 2: Total Spending per Month for Members with a SUD Diagnosis



[45] CMS guidance called for these metrics to be calculated on a quarterly basis; however, monthly calculation provided more data points to conduct a rigorous ITS analysis.

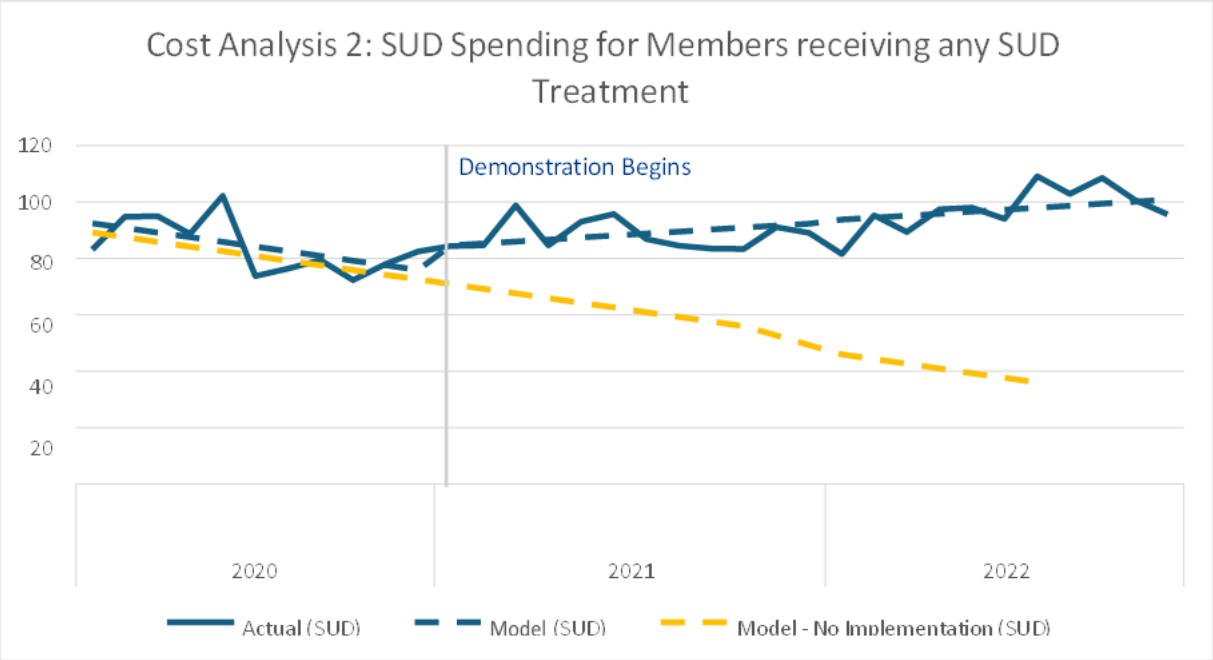
```
Coefficients:
                          Estimate   Std. Error  t value  Pr(>|t|)
(Intercept)               1894.335    78.931     24.000   <2e-16 ***
df$demonstration          -227.131    113.087    -2.008   0.0537 .
df$time                    -4.763     10.276     -0.463   0.6464
df$demonstration:df$time   26.044     10.756     2.421    0.0217 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 107.8 on 30 degrees of freedom
Multiple R-squared:  0.7911,    Adjusted R-squared:  0.7702
F-statistic: 37.87 on 3 and 30 DF,  p-value: 2.532e-10
```

The pre-Demonstration slope of the total cost metric was slightly negative, although it was not statistically different from zero. The Demonstration slope shows a small increase that is significant at the 5% level. This was slightly offset by a one-time drop in the intercept.

The net effect of the Demonstration is an increase in PMPM costs over time of about $26 for each additional month. In other words, the Demonstration has increased the overall budget spent on members with SUD diagnoses slightly.

The graph below shows the total spending per month for members receiving any SUD treatment.

Cost Analysis 2: SUD Spending for Members Receiving any SUD Treatment



Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	95.8154	5.1756	18.513	< 2e-16 ***
df$demonstration	-20.4407	7.4152	-2.757	0.00984 **
df$time	-1.6607	0.6738	-2.465	0.01966 *
df$demonstration:df$time	2.3682	0.7053	3.358	0.00215 **

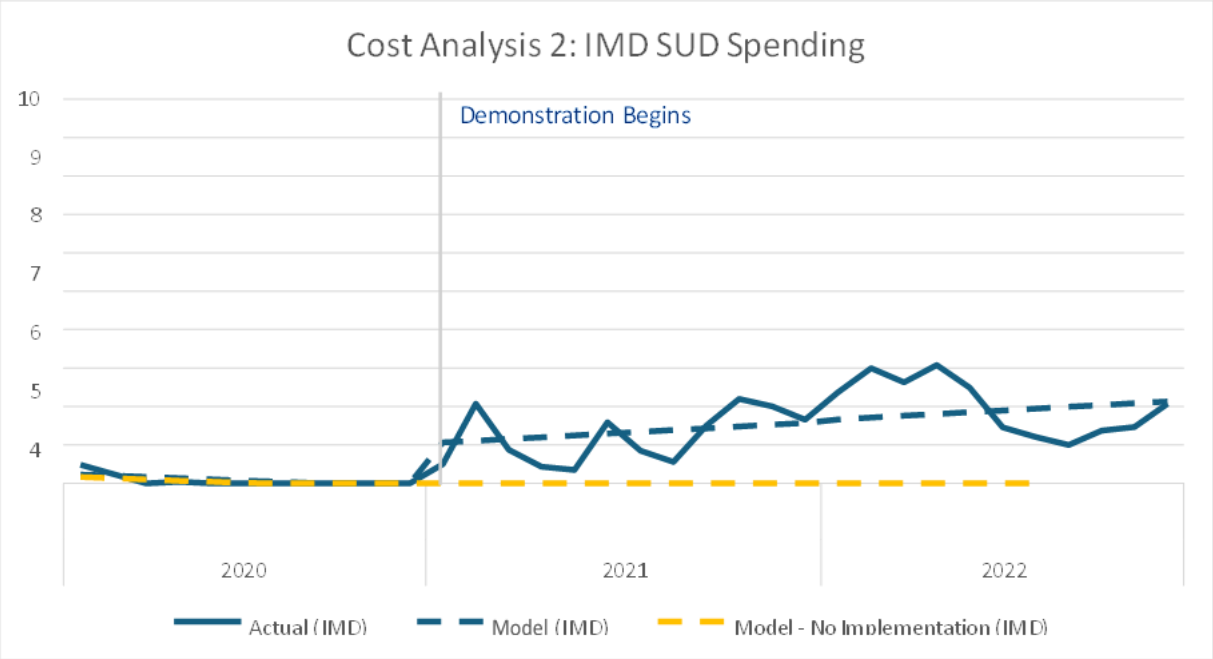
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 7.067 on 30 degrees of freedom
Multiple R-squared: 0.486, Adjusted R-squared: 0.4347
F-statistic: 9.457 on 3 and 30 DF, p-value: 0.0001486

Prior to the Demonstration, Colorado was spending less money over time per member receiving SUD treatment (i.e., the slope was negative), and this decrease was statistically significant. The increased costs spent to treat members (i.e., increasing slope) during the implementation period is significant. There was a one-time Demonstration intercept change that was negative, and statistically significant. These are offsetting effects, and the graph shows that at the end of the data period, the PMPM spending for members receiving SUD treatment was higher than the pre-Demonstration projection.

The graph below shows the total IMD spending per month for members receiving care in an IMD.

Cost Analysis 2: IMD SUD Spending



Coefficients:

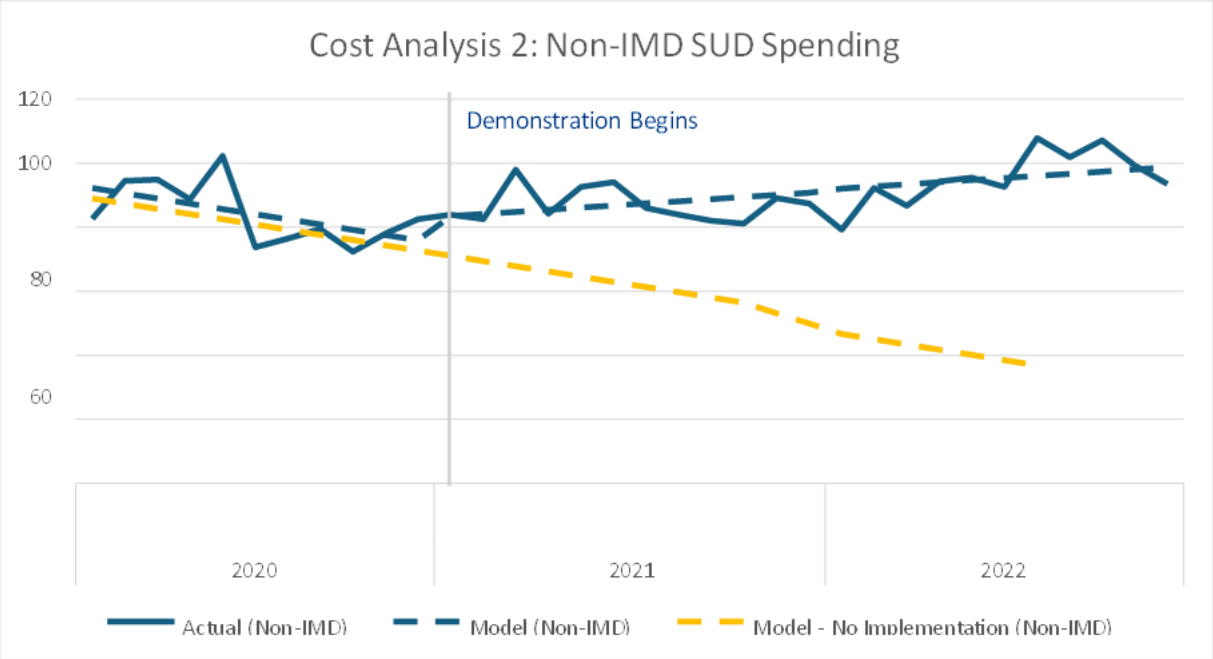
	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	0.29215	0.46509	0.628	0.535
df$demonstration	0.16403	0.66634	0.246	0.807
df$time	-0.03164	0.06055	-0.523	0.605
df$demonstration:df$time	0.07825	0.06338	1.235	0.227

Residual standard error: 0.635 on 30 degrees of freedom
Multiple R-squared: 0.6225, Adjusted R-squared: 0.5847
F-statistic: 16.49 on 3 and 30 DF, p-value: 1.624e-06

Consistent with the historic Medicaid IMD spending policy for adults, spending for SUD IMDs was essentially zero pre-Demonstration and only occurred for some seniors and children in absence of the Demonstration. After implementation, the PMPM IMD spending increased during the Demonstration period, but due to the high variability in monthly spending, the increase was not statistically significant.

The graph below shows the total non-IMD SUD spending per month for members receiving care in an IMD.

Cost Analysis 2: Non-IMD SUD Spending



Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	95.5233	5.3227	17.946	< 2e-16 ***
df$demonstration	-20.6047	7.6259	-2.702	0.01123 *
df$time	-1.6291	0.6930	-2.351	0.02549 *
df$demonstration:df$time	2.2900	0.7253	3.157	0.00362 **

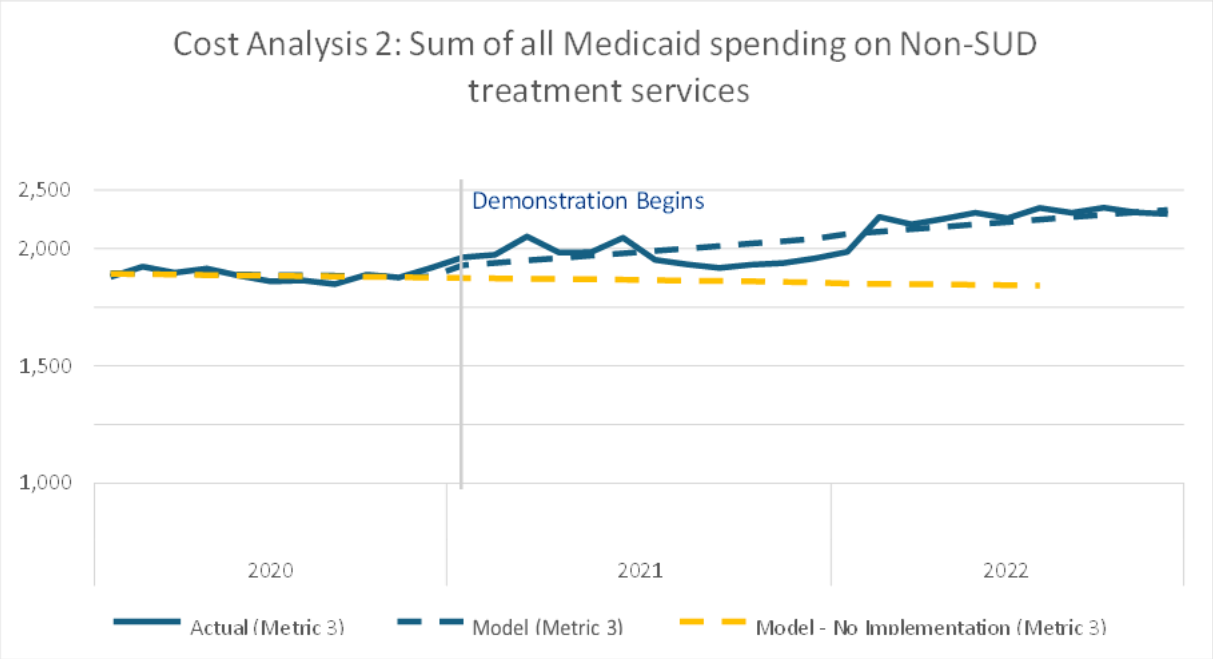
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 7.268 on 30 degrees of freedom
Multiple R-squared: 0.4219, Adjusted R-squared: 0.3641
F-statistic: 7.297 on 3 and 30 DF, p-value: 0.0008161

The analysis of non-IMD SUD spending Demonstrates that SUD treatment spending for non-IMD services has increased under the Demonstration.

The graph below shows the total Medicaid spending per month for members with a SUD diagnosis on non-SUD treatment.

Cost Analysis 2: Sum of all Medicaid Spending on Non-SUD Treatment Services




```
Coefficients:
                          Estimate   Std. Error  t value  Pr(>|t|)
(Intercept)               1798.519     75.652    23.774   <2e-16 ***
df$demonstration          -206.691    108.388    -1.907   0.0661 .
df$time                   -3.102       9.849     -0.315    0.7550
df$demonstration:df$time  23.675      10.309     2.296    0.0288 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 103.3 on 30 degrees of freedom
Multiple R-squared:  0.7952,    Adjusted R-squared:  0.7748
F-statistic: 38.83 on 3 and 30 DF,  p-value: 1.879e-10
```

Non-SUD treatment costs for members with a SUD diagnosis have continued to increase. Eventually, the goal of the Demonstration is that non-SUD Medicaid costs will eventually decrease as the spending under the Demonstration increases and the outcomes under the Demonstration improve.

Cost Analysis 3: Medicaid Cost Drivers for Members with SUD Diagnoses

As seen in the tables and graphs below, spending for specific services which drive overall costs for members with a SUD follow similar patterns. The table directly below shows overall spending by cost drivers for members with a SUD diagnosis.

Cost Analysis 3: Spending by Cost Drivers for Members with a SUD diagnosis

Cost Metric Monthly Output	2020	2021	2022
Inpatient Spending	300,681,022	370,009,701	430,672,381

Cost Metric Monthly Output	2020	2021	2022
ED Spending	129,361,477	158,576,206	206,545,982
Non-ED Outpatient Services Spending	591,021,738	756,294,627	905,971,403
Pharmacy Spending	337,408,946	412,829,855	475,637,883
Long-Term Care (LTC) Spending	168,143,826	204,027,385	261,665,200
Total Spending for Members with a SUD Diagnosis	$1,526,617,009	$1,901,737,774	$2,280,492,849

In aggregate, the largest aggregate expenditures are for non-ED outpatient services spending. The table directly below shows the PMPM spending by cost drivers with a SUD diagnosis.[46]

Cost Analysis 3: PMPM Spending by Cost Drivers with a SUD Diagnosis

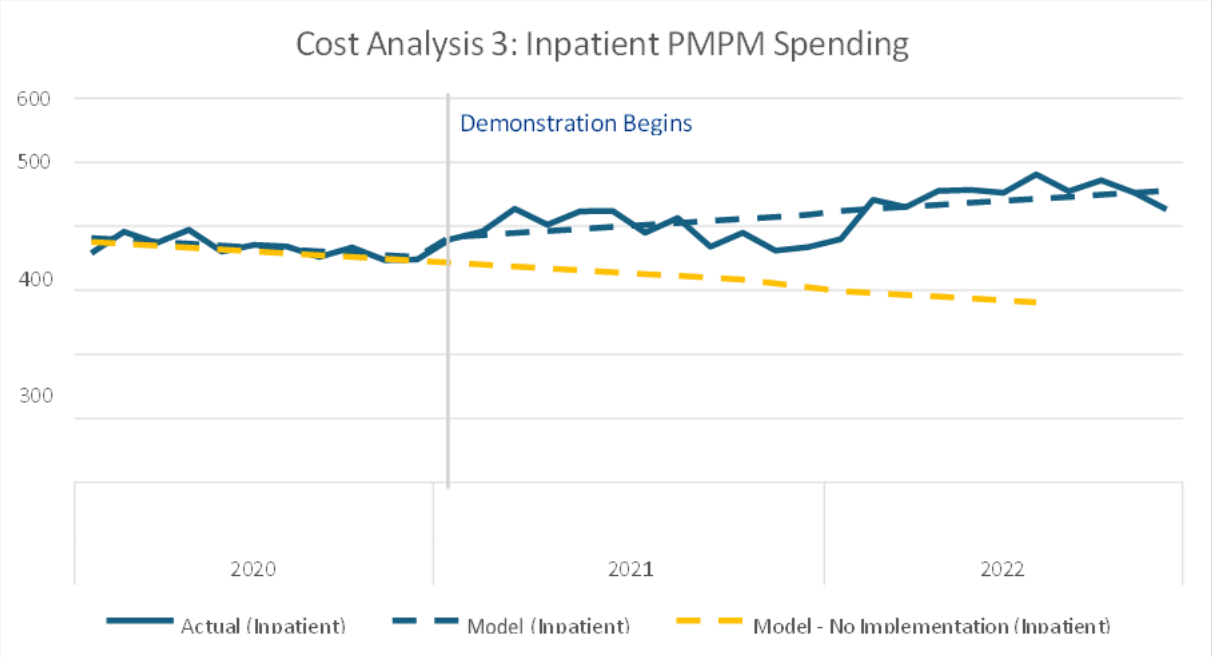
Cost Metric Monthly Output	2020	2021	2022
Inpatient PMPM Spending	$354.69	$394.55	$427.38
ED PMPM Spending	$152.60	$169.09	$204.97
Non-ED Outpatient Services PMPM Spending	$697.17	$806.45	$899.05
Pharmacy PMPM Spending	$398.01	$440.21	$472.00
LTC PMPM Spending	$198.34	$217.56	$259.67
Total Cost PMPM	$1,800.81	$2,027.86	$2,263.07

On a PMPM basis, the non-ED outpatient services are the largest portion of the overall PMPM costs. The ITS analyses below look at the growth of each of these drivers to see if the Demonstration had an impact on any of the specific categories.

The table below looks at the effect of the Demonstration on inpatient spending.

[46] These metrics utilize the total member months served (e.g., 847,738 in 2020, 937,806 in 2021, and 1,007,699 in 2022).

Cost Analysis 3: Inpatient PMPM Spending



Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	387.279	18.027	21.483	<2e-16 ***
df$demonstration	-45.226	25.828	-1.751	0.0902 .
df$time	-2.949	2.347	-1.257	0.2186
df$demonstration:df$time	6.106	2.457	2.485	0.0187 *

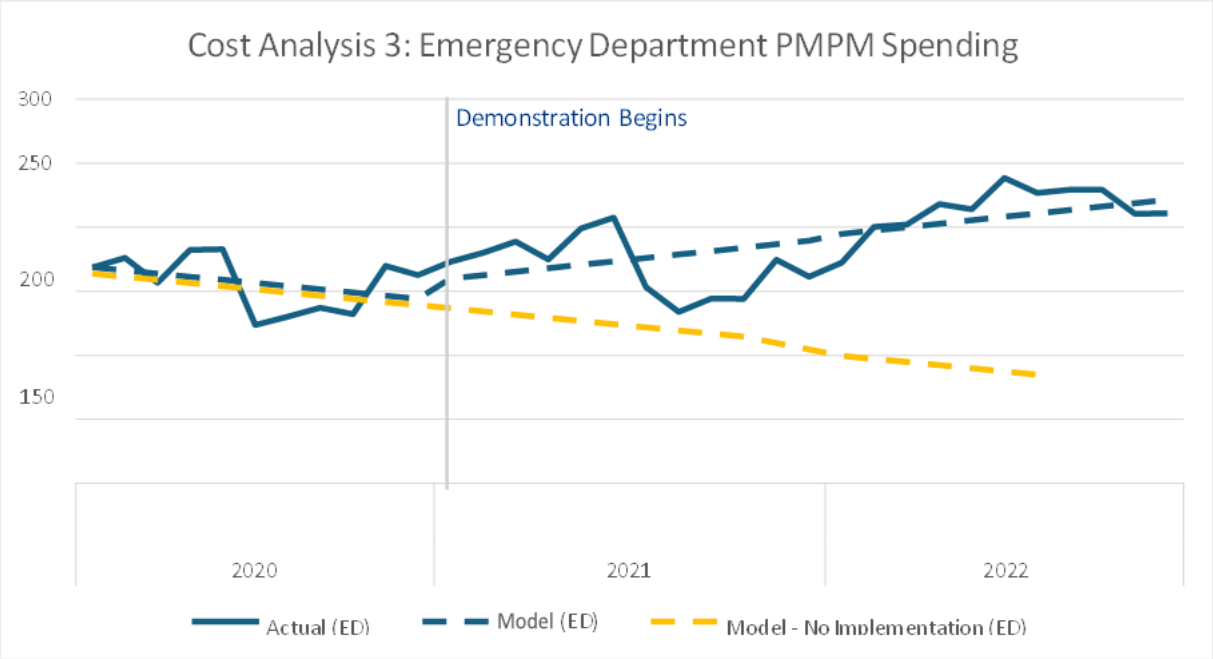
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 24.61 on 30 degrees of freedom
Multiple R-squared: 0.6453, Adjusted R-squared: 0.6098
F-statistic: 18.19 on 3 and 30 DF, p-value: 6.472e-07

The Demonstration, which had a goal of covering IMD services in residential and hospital settings, appears to have resulted in an increase of inpatient spending. This supports the goals of the Demonstration.

The table below looks at the effect of the Demonstration on ED spending.

Cost Analysis 3: ED PMPM Spending



Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	173.781	17.063	10.184	2.98e-11 ***
df$demonstration	-48.533	24.447	-1.985	0.0563 .
df$time	-2.468	2.221	-1.111	0.2753
df$demonstration:df$time	5.143	2.325	2.212	0.0348 *

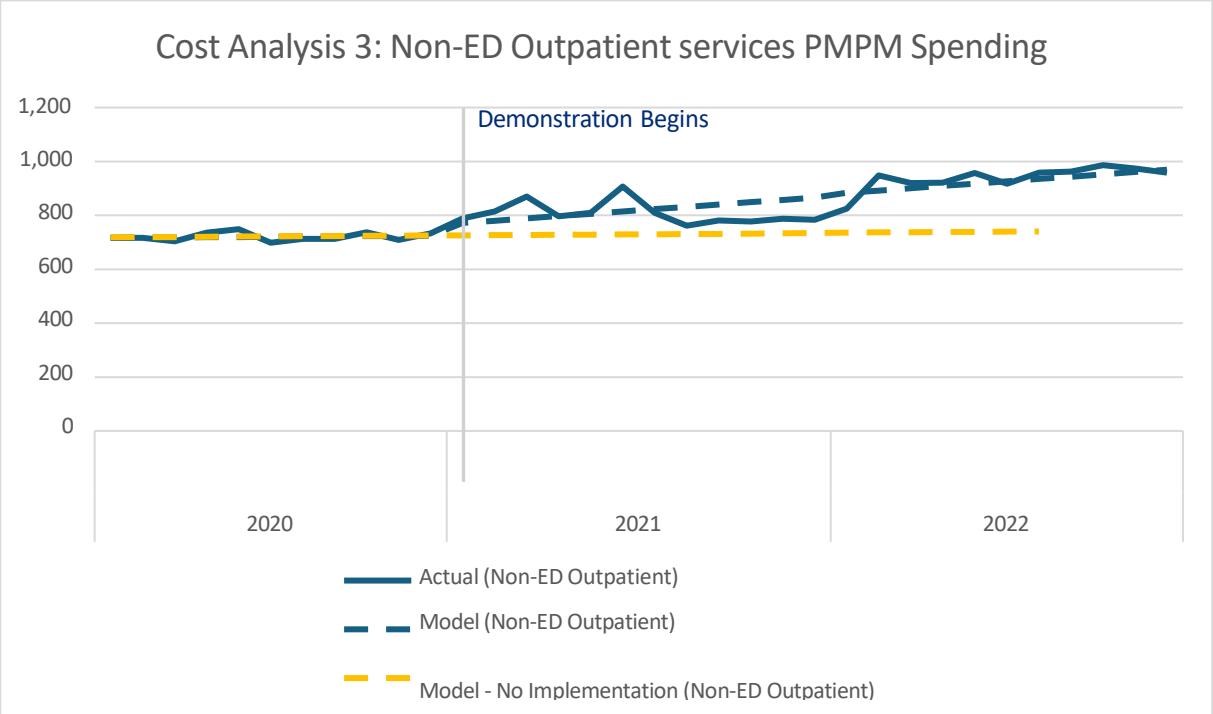
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 23.3 on 30 degrees of freedom
Multiple R-squared: 0.5194, Adjusted R-squared: 0.4713
F-statistic: 10.81 on 3 and 30 DF, p-value: 5.594e-05

Prior to the Demonstration, ED spending for members with SUD diagnoses was declining. The Demonstration appears to have increased spending for members with SUD diagnoses, which is opposite of the intent of the Demonstration.

The table below looks at the effect of the Demonstration on non-ED outpatient spending for members with a SUD diagnosis.

Cost Analysis 3: Non-ED Outpatient Services PMPM Spending



Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	715.7136	31.5537	22.682	<2e-16 ***
df$demonstration	-56.0036	45.2078	-1.239	0.2250
df$time	0.6775	4.1079	0.165	0.8701
df$demonstration:df$time	7.9198	4.3000	1.842	0.0754 .

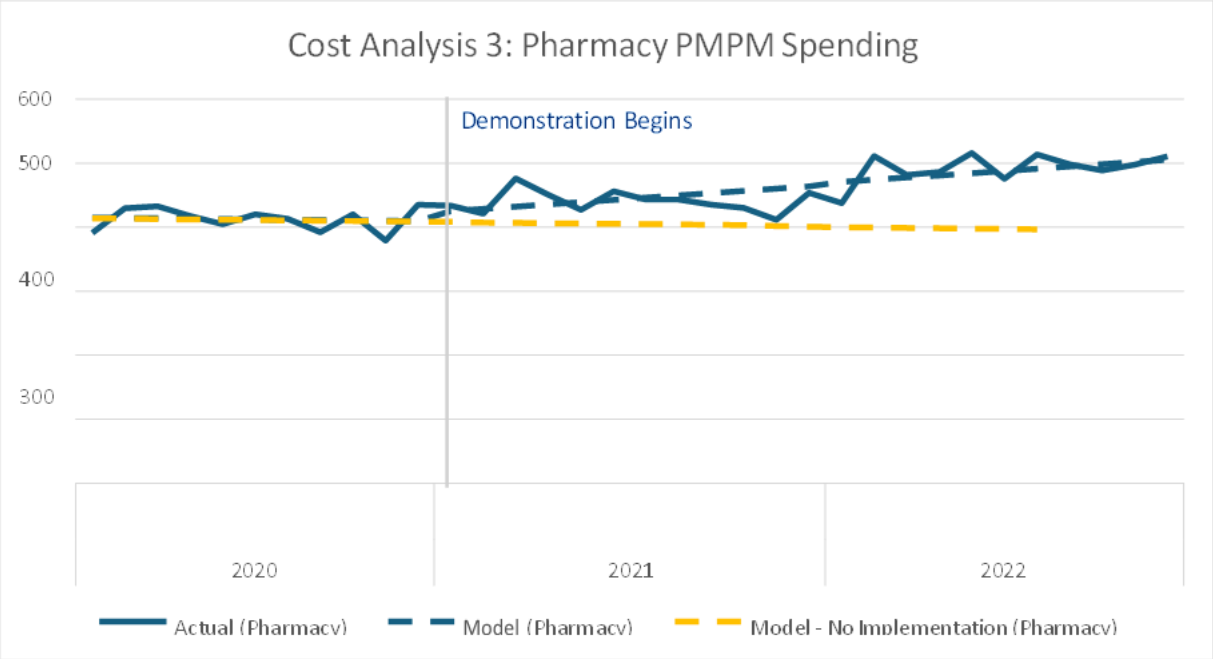
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 43.08 on 30 degrees of freedom
Multiple R-squared: 0.8189, Adjusted R-squared: 0.8008
F-statistic: 45.21 on 3 and 30 DF, p-value: 3.02e-11

The pre-Demonstration non-ED outpatient spending was relatively flat with a slight increase for Medicaid members with a SUD diagnosis. The Demonstration appears to have resulted in a one-time increase in spending with the inception of the Demonstration as well as increasing the rate of spending over time. To the extent that this signals an increase in ambulatory SUD services and retention in care, this outcome is consistent with the goals of the Demonstration.

The table below looks at the effect of the Demonstration on pharmacy spending for individuals with SUD diagnoses.

Cost Analysis 3: Pharmacy PMPM Spending



Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	416.3617	15.6599	26.588	<2e-16 ***
df$demonstration	-35.9446	22.4363	-1.602	0.1196
df$time	-0.5489	2.0387	-0.269	0.7896
df$demonstration:df$time	4.0180	2.1340	1.883	0.0695 .

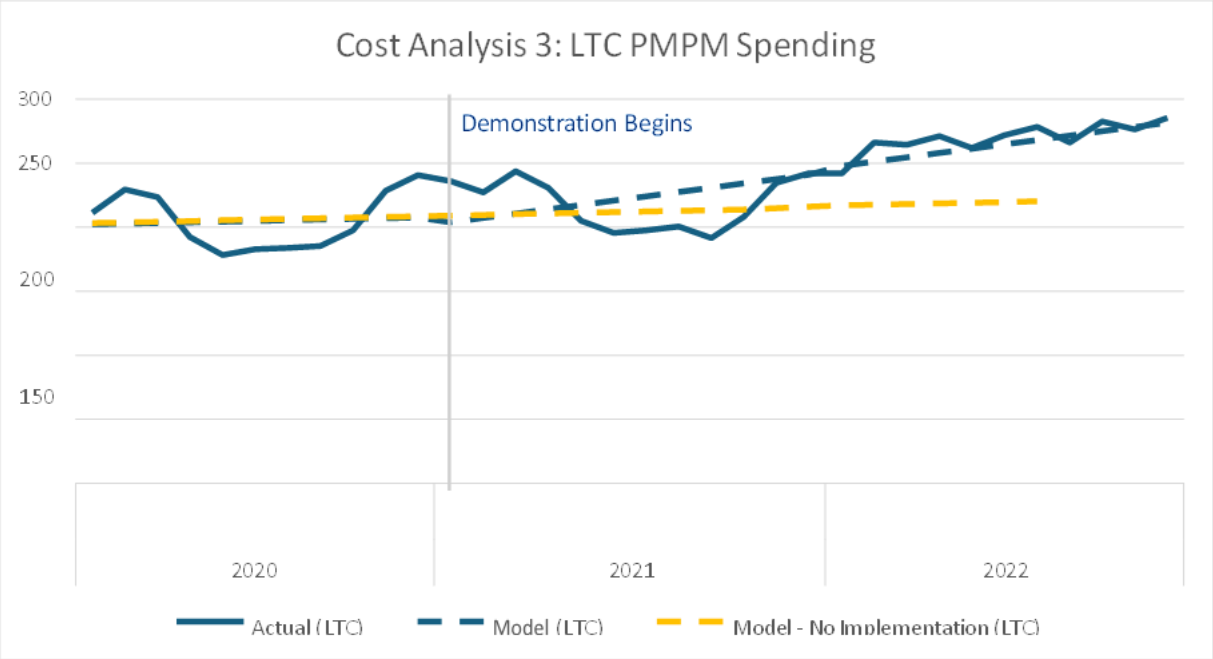
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 21.38 on 30 degrees of freedom
Multiple R-squared: 0.7163, Adjusted R-squared: 0.6879
F-statistic: 25.24 on 3 and 30 DF, p-value: 2.385e-08

The pre-Demonstration pharmacy outpatient spending was declining slightly for Medicaid members with a SUD diagnosis. The Demonstration appears to have resulted in a one-time increase in pharmacy spending with the inception of the Demonstration, as well as increasing the rate of spending over time. To the extent that this signals an increase in MAT services, this outcome is consistent with the goals of the Demonstration. However, other metrics such as CMS Metric #12 above suggest that while MAT usage continues to increase after the Demonstration implementation, it is not increasing at the rate expected prior to the Demonstration. The growth in pharmacy spending therefore may also be attributable to pharmacy services outside of MAT.

The table below looks at the effect of the Demonstration on LTC spending for members with SUD diagnoses.

Cost Analysis 3: LTC PMPM Spending



Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	201.200	15.303	13.148	5.51e-14 ***
df$demonstration	-41.424	21.924	-1.889	0.0685 .
df$time	0.526	1.992	0.264	0.7936
df$demonstration:df$time	2.857	2.085	1.370	0.1808

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 20.89 on 30 degrees of freedom
Multiple R-squared: 0.6448, Adjusted R-squared: 0.6093
F-statistic: 18.15 on 3 and 30 DF, p-value: 6.605e-07

The pre-Demonstration LTC spending had a slight increase for Medicaid members with a SUD diagnosis over time. The Demonstration appears to have resulted in a one-time increase in spending with the inception of the Demonstration, as well as increasing the rate of spending over time for LTC service. In Metrics #3 and #6, Colorado experienced dramatic increases in the number of members age 65 and older and the number of dual eligibles who had SUD diagnoses and received an SUD service over the Demonstration. The shift in the age and eligibility of members has resulted in the growth of LTC needs increasing the cost of spending for members who have an SUD diagnosis.

Metric #3: The number of members with SUD diagnoses who are dual eligibles and age 65 and older has continued to increase over the life of the Demonstration above non-dual eligible and non-elder trends. See the graphs and table below.

Metric #3: Number of Members with SUD Diagnoses that are Dual Eligible and Age 65 and Older

Metric #3	DY1Q1 January 1, 2023–March 31, 2021	DY3Q3 July 1, 2023–September 30, 2023	Count Change	Percentage of Change
Medicaid Only	204,427	231,349	26,922	13.2%
Dual Eligible	18,039	24,584	6,545	36.3%
Children under age 18	6,159	6,971	812	13.2%
Adults ages 18–64	209,965	238,011	28,046	13.4%
Older Adults 65 years and older	6,342	10,951	4,609	72.7%

Metric #6: The number of Unduplicated Members Receiving any Services who are Dual Eligibles and Age 65 or Older Increased More than for Non-Dual Eligibles and Non-Elder Members.

Metric #6	DY1Q1 January 1, 2021–March 31, 2021	DY3Q3 July 1, 2023–September 30, 2023	Count Change	Percentage of Change
Medicaid Only	73,753	79,757	6,004	8.1%
Dual Eligible	5,952	7,068	1,116	18.8%
Children under age 18	1,309	1,319	10	0.8%
Adults ages 18–64	75,975	82,217	6,242	8.2%
Older Adults 65 years and older	2,421	3,289	868	35.9%

Section 7
Conclusions

Primary Driver and Goal 1: Increased Rates of Identification, Initiation, and Engagement in Treatment

Hypothesis 1: The Demonstration will Expand Access to Critical Levels of Care for OUD and Other SUDs, Resulting in Increased Rates of Identification, Initiation, And Engagement in Treatment for OUD and Other SUDs

As noted, the State completed significant activities to ensure that new levels of care were implemented, including: rate methodologies, contract amendments, billing system changes, and billing rules. The State also implemented changes to regulatory oversight including licensing of facilities to align with ASAM criteria. However, as shown in the data, the effects of these implementation activities on individual levels of care were mixed.

The Demonstration did not significantly affect the use of prevention/early intervention or MAT services.

The Demonstration did not affect the overall number of members receiving Early Intervention. Although, the overall number of members receiving screening, brief intervention, and referral to treatment (SBIRT) increased above what was predicted without the Demonstration. However, the trends were small and had so much variation that there was no statistical significance either pre- or post-Demonstration. All subpopulations of focus — numbers were too small and variable to yield meaningful and statistically significant results for any of the subgroups. In conclusion, there was not enough utilization of Early Intervention services to detect any changes.

The Demonstration had mixed effects for outpatient and IOP/partial hospitalization services. A one-time significant effect on increasing the number of Medicaid members receiving outpatient SUD services, and IOP/partial hospitalization services at the start of the Demonstration. Increases over time following implementation were not significantly greater than increases projected had the Demonstration not been implemented for the overall population. There were significant increases in utilization across the Demonstration for both children and senior populations, but not for other subpopulations.

The Demonstration increased the number of members receiving outpatient services initially, as well as the rate of members receiving outpatient services. For outpatient services overall, the evaluation found a small and insignificant positive trend pre-Demonstration, with a lower post-Demonstration trend that was not statistically significant. The Demonstration increased the overall number of members receiving outpatient services initially, and the rate of Medicaid members who received treatment continued to increase significantly over the Demonstration period. Pregnant participants experienced a one-time increase in utilization of outpatient services during the Demonstration period, but there was not a statistically significant change in the trend during the Demonstration. There were no significant effects for dual eligible, OUD, or criminal justice involved populations. Both children and seniors; however, showed a statistically significant increase in the utilization of outpatient services during the Demonstration period as compared to the pre-Demonstration trend.

The Demonstration had a positive effect on the overall use of SUD IOP services, but a negative effect on the use of IOP SUD services in the children's population. IOP had a small and insignificant positive trend pre-Demonstration with the post-Demonstration trend increasing but not significantly. The relative IOP increase in the first month of the Demonstration was larger than for outpatient services. The percent of members with an IOP service had a steep and significant increase immediately following implementation, but there was no significant increase in rates thereafter. Note partial hospitalization was not implemented in Colorado until after the data collection period for the interim evaluation ended. For most subgroups (e.g., dual eligibles, pregnant women, OUD, and criminal justice involved), trends were either the same as the total population or numbers were too small for tests of statistical significance. However, the child subgroup trends experienced a statistically significant decrease in utilization at the beginning of the Demonstration, followed by a non-significant increase in trend. These factors offset each other, and by the end of the data period, the Demonstration utilization for children was above the pre-Demonstration trend.

The increase in outpatient utilization for children is somewhat misaligned with stakeholder reports of decreasing utilization. However, those stakeholder reports were consistent with the differential effects on IOP/PHP utilization for children which documented decreases in utilization at the beginning of the Demonstration.

The Demonstration had a significant effect on increasing the number of Medicaid members receiving residential and inpatient SUD services and members receiving WM services over the entire Demonstration period. This finding is consistent with the Demonstration's focus on ASAM levels 3.1, 3.2WM, 3.5, 3.7, and 3.7WM. In these services, there was a large increase immediately following the implementation, followed by a trend of increasing services over time during the Demonstration period. While the initial hypothesis was that the Demonstration would increase these services, it will be important to note in future evaluations whether the utilization of the highest levels of care begins to decrease as Medicaid members with an SUD are identified sooner and receive lower-level intervention services before the need for inpatient stays, and/or relapses are reduced as the Demonstration matures. States typically see the highest levels of care (ASAM 3.7 and 4) declining once ASAM has been fully implemented with an increase in ASAM 2.1, 2.5, and 3.1. There were no subgroup trends for residential and inpatient care.

The Demonstration had a large significant positive initial utilization effect on the use and rate of use of residential and inpatient services. Trends for other subpopulations were similar but not statistically significant. For residential and inpatient services, the pre-Demonstration trend was negative and not statistically different from zero. At the start of the Demonstration there were statistically significant increases in both the initial utilization and trend in SUD Residential and Inpatient Services. The magnitude of the change in January 2021 strongly suggests the change was driven by the Demonstration.

Trends for the proportion of Medicaid members receiving services were the same as the trend for the number of members receiving residential or inpatient treatment. Utilization trends for the child, pregnant, and criminal justice involved populations were positive during the Demonstration period, but those increases were not statistically significant.

Trends for the other subgroups analyzed were the same as those for the total Medicaid population or contained numbers too small for a reliable analysis.

The Demonstration had a positive effect on WM use and the rate of use for the overall population. However, the immediate effect on pregnant women was an initial decrease in utilization. Members receiving WM were decreasing before the COVID-19 PHE. The trend began to show statistically significant increases in these services at the start of the Demonstration. There was also an offsetting one time change in the intercept. The net effect of the Demonstration is a relatively large increase in utilization of WM. This trend holds when analyzed using the proportion of Medicaid members receiving WM services. For pregnant women, there was a statistically significant initial decrease in WM services immediately following implementation of the Demonstration, followed by a steady increase that is not statistically significant. For all other subgroups, the trends mirrored those of the total Medicaid population, but were less likely to be statistically significant, largely due to small numbers in these subpopulations.

The Demonstration overall saw fewer new members per month initiating MAT use even though the number of dual eligible and senior populations increased under the Demonstration. The number of members with MAT use prior to the Demonstration was increasing at a rate of about 78 people per month. With the start of the Demonstration, this trend declined to approximately 30 additional members per month receiving MAT. This change was statistically significant at the 0.05 level but not at other levels or for the trends in the proportion of members utilizing MAT. Dual eligible and senior populations saw statistically significant increases in MAT services. For all other groups, trends were the same for the total population or numbers were too small for reliable analysis.

There was a large increase in the average length of stay in an IMD for Medicaid member between the baseline and year two of the Demonstration.

Hypothesis 2: The Demonstration will Promote Widespread Use of Evidence-Based SUD Specific Patient Placement Criteria Resulting in Increased Rates of Identification, Initiation, and Engagement in Treatment for OUD and Other SUDs

Providers reported that use of ASAM placement criteria has been completed and adopted by both providers and MCEs. However, as discussed previously, there are some inconsistencies across MCEs that lead to challenges for providers and, sometimes, barriers to access for Medicaid members due to the inconsistency of the day-to-day implementation across MCEs. More training for the MCEs, particularly staff responsible for prior authorizations, on specific features of each ASAM level of care would improve access to care for Medicaid members.

The first two years of the Demonstration saw only a modest increase in the number of available providers, meaning that capacity may remain a barrier to access. While there was an initial increase in the number of providers during the first DY, that number fell in the second year, nearly to the baseline level. This was consistent with reports from stakeholders about lack of sufficient capacity within existing providers to provided needed care, particularly in rural areas and with services for specific populations, such as children and pregnant people.

This finding is reinforced by the relatively modest increase in the number of members receiving any kind of SUD treatment service. Again, while there was a one-time increase at the start of the Demonstration, the overall increasing trend was no different than the increase predicted had the Demonstration not been implemented.

Ultimately, possibly because of a limited increase in provider capacity, the Demonstration did not affect the rate of members initiating AOD treatment for the total Medicaid population. There was a small immediate increase in the number of children initiating treatment, but this was not sustained over the first 2.5 years in the data.

Hypothesis 3: The Demonstration will Promote Sufficient Provider Capacity at Each Level of Care, Including MAT, for SUD/OUD, Resulting in Increased Rates of Identification, Initiation, and Engagement in Treatment for OUD and Other SUDs

A small increase in the number of SUD treatment providers and a large increase in the number of MAT providers did not translate to increased rates of initiation of treatment or the utilization of overall SUD services or MAT services for the Medicaid population.

Providers and MCEs all pointed to specific lack of sufficient capacity in rural/frontier areas of the State, and services for children, pregnant people and those with criminal justice involvement. In addition, providers expressed difficulty in serving people without legal immigration status and those who need services in another language, particularly Spanish. Providers expressed a desire for reimbursement rates that reflect the higher costs of hiring bilingual treatment staff.

State staff expressed belief that increasing MAT services was a success, particularly for the criminal justice involved population. This finding further supports a recommendation that the State examine why these successful policy changes and increases in providers are not translating to increased service access.

Primary Driver: Improved Access to Care for Physical Health Conditions Among Beneficiaries with OUD or Other SUDs

Hypothesis 4: The Demonstration will Improve Care Coordination for Physical Care, Resulting in Improved Access to Care for Physical Health Conditions Among Beneficiaries with OUD or Other SUDs

While significant progress has been made regarding planned activities around improving care coordination across the State, these efforts have not yet translated into results as reported by Demonstration stakeholders or as seen in the quantitative data around access to physical healthcare. In addition to the modest increases in access to preventive/ambulatory health services for adult Medicaid members with SUD, the State continues to experience large and growing readmission rates, decreasing engagement statistics, and a disproportionate percentage of the population receiving WM services relative to sustained SUD treatment. While members who participated in the June 2024 listening session expressed satisfaction with SUD-specific services and services providers, they did not have examples of how their overall access to healthcare or navigation of the healthcare system has improved under the Demonstration. As a result, Mercer cannot conclude that care coordination resulting in improved physical healthcare has improved under the Demonstration.

Hypothesis 5: The 1115 SUD Demonstration will Implement use of Nationally Recognized, Evidence-Based SUD Program Standards to set Residential Treatment Provider Qualifications Resulting in Increased Adherence to and Retention in Treatment for OUD and Other SUDs

Implementation activities have been completed for ensuring the use of nationally recognized, evidence-based SUD program standards to set residential treatment provider qualifications. The State is still working toward completing provider reviews. For the Interim Evaluation Report, it is too early to reach any additional conclusions regarding this hypothesis.

Thus far, there has been a reduction in the continuity of pharmacotherapy for OUD, consistent with the finding that there has not been an increase in MAT services, despite increases in the number of providers. New programs have been difficult to sustain because of insufficient funding and utilization.

Hypothesis 6: The 1115 SUD Demonstration will Improve Care Coordination and Transitions Between Levels of Care Qualifications Resulting in Increased Adherence to and Retention in Treatment for OUD and Other SUDs

As previously noted, care coordination remains an area of potential for the State. While some infrastructure improvements have been made in the form of studies and legislative changes, there remains more work to do to improve care coordination for members.

Findings regarding follow-up after an ED visit were mixed. While follow-up after 30 days improved considerably under the Demonstration, follow-up after seven days decreased during the Demonstration. These findings are consistent with incomplete implementation of total system improvements to care coordination and transitions across levels of care, as well as findings that readmission rates are increasing, engagement statistics are decreasing, and that WM relative to treatment is very high.

Primary Driver: Reduction in Overdose Deaths, Particularly those Due to Opioids

Hypothesis 7: The Demonstration will Implement Comprehensive Treatment and Prevention Strategies to Address Opioid Abuse and OUD as well as Recruit and Train more Providers to Provide MAT, Resulting in a Reduction in Overdose Deaths

Demonstration efforts to address opioid abuse have been largely successful during the first 2.5 DYs. The number of PDMP users has increased and stakeholders reported that implementation efforts to increase PDMP usage have been successful.

Since implementation, the concurrent use opioids and benzodiazepines has decreased, the overall number of opioids dispensed has decreased, and there has been a small decrease in the number of opioid deaths. However, the Demonstration did not seem to have the intended effect on the use of opioids in high dosages.

Hypothesis 8: The Demonstration will Lead to Widespread Use of Evidence-Based SUD Specific Patient Placement Criteria Resulting in Reduced Readmissions to the Same or Higher Level of care where Readmission is Preventable or Medically Inappropriate for OUD and Other SUD

Demonstration progress and implementation advances from some short-term outcomes have not completely translated into long-term progress in lowering readmission rates. While the Demonstration intended to reduce readmissions, the rate increased between baseline and the second DY. This may be a reflection of the need to continue to improve access to care across all critical level of care, improve retention in care, improve follow-up after hospitalizations and ED use, and for all populations, as well as the ongoing, but incomplete, work to improve care coordination and treatment level transitions.

Primary Driver: Reduced Utilization of EDs and Inpatient Hospital Settings for OUD and Other SUD treatment where the Utilization is Preventable or Medically Inappropriate through Improved Access to Other Continuum of Care Services

Hypothesis 9: The Demonstration will Lead to Widespread Use of Evidence-Based SUD Specific Patient Placement Criteria Resulting in Reduced Utilization of EDs and Inpatient Hospital Settings for OUD and Other SUD Treatment Where the Utilization is Preventable or Medically Inappropriate

The Demonstration has not led reduced utilization of EDs and inpatient hospital settings for OUD and other SUD treatment. As noted above, the Demonstration did not appear to have a positive effect on ED utilization. The observed increasing ED trend is contrary to the goals of the Demonstration and suggests that additional initiatives to prevent additional ED visits are needed. In addition, the post-Demonstration changes related to the coverage of hospital IMDs might have stabilized the total number of SUD hospital beds available in the system after the Demonstration implementation. However, the overall trend of increasing inpatient utilization with the Demonstration is not consistent with the goals of the program. These results are consistent with other results that hospital readmission rates under the Demonstration are increasing and that short-term follow-up after ED care is not occurring. Additional interventions seem to be necessary to accomplish the goals of the Demonstration.

Hypothesis 10: The Demonstration will Improve Outcomes for Members Using SUD Services with Similar or Lower Service Costs

The Evaluation Design called for three cost analysis: Annual Aggregate costs, Spending for SUD versus non-SUD treatment for members with SUD Diagnoses, and Medicaid Cost Drivers for members with SUD diagnoses.

For the first analysis, the annual aggregate metrics found growth under the Demonstration. The total SUD spending grew after the implementation of the Demonstration by $27 million. The SUD IMD expenditures grew from almost $77,000 to over $2 million after the Demonstration. The per capita SUD spending under the Demonstration grew from $704 to $824 annually. The per capita IMD spending under the Demonstration grew from $151 to $3,113 annually.

For the second analysis, which were calculated on a monthly basis to facilitate the ITS study, the total cost metric pre-Demonstration costs were slightly declining, but after the Demonstration there was a small increase in the rate of spending. That increased rate was offset by a one-time decrease in costs. The overall effect was that the Demonstration has increased the overall budget spent on members with SUD diagnoses slightly.

On a per member basis, the rate of spending was decreasing prior to the Demonstration. After the Demonstration was implemented, there was a one-time decrease in costs with an increased rate of spending. Overall, the PMPM spending for members receiving SUD treatment under the Demonstration was higher than the pre-Demonstration projection.

Consistent with the historic Medicaid IMD spending policy for adults, spending for SUD IMDs was essentially zero pre-Demonstration and only occurred for some seniors and children in absence of the Demonstration. After implementation, the PMPM IMD spending increased during the Demonstration period, but due to the high variability in monthly spending it was not statistically significant. The non-IMD SUD spending increased under the Demonstration.

Non-SUD treatment costs have increased under the Demonstration. The hope is that non-SUD treatment costs will eventually decrease as the spending under the Demonstration increases and the outcomes under the Demonstration improve. However, at this time, these outcomes have not been realized.

For the third set of analyses, spending for specific services which drive overall costs for members with a SUD follow similar patterns. In aggregate, the largest aggregate expenditures are for non-ED outpatient services spending. On a PMPM basis, the non-ED outpatient services are the largest portion of the overall PMPM costs. The ITS analyses below look at the growth of each of these drivers to see if the Demonstration had an impact on any of the specific categories.

- The Demonstration, which had a goal of covering IMD services in residential and hospital settings, appears to have resulted in an increase of inpatient spending. This supports the goals of the Demonstration.
- Prior to the Demonstration, ED spending for members with SUD diagnoses was declining. The Demonstration appears to have increased spending for members with SUD diagnoses, which is opposite of the intent of the Demonstration.
- The pre-Demonstration non-ED outpatient spending was relatively flat with a slight increase for Medicaid members with a SUD diagnosis. The Demonstration appears to have resulted in a one-time increase in spending with the inception of the Demonstration as well as increasing the rate of spending over time. To the extent that this signals an increase in ambulatory SUD services and retention in care, this outcome is consistent with the goals of the Demonstration.
- The pre-Demonstration pharmacy outpatient spending was declining slightly for Medicaid members with a SUD diagnosis. The Demonstration appears to have resulted in a one-time increase in pharmacy spending with the inception of the Demonstration, as well as increasing the rate of spending over time. To the extent that this signals an increase in MAT services, this outcome is consistent with the goals of the Demonstration. However, other metrics such as CMS Metric #12 above suggest that while MAT usage continues to increase after the Demonstration

implementation, it is not increasing at the rate expected prior to the Demonstration. The growth in pharmacy spending therefore may also be attributable to pharmacy services outside of MAT.

- The pre-Demonstration LTC spending had a slight increase for Medicaid members with a SUD diagnosis over time. The Demonstration appears to have resulted in a one-time increase in spending with the inception of the Demonstration, as well as increasing the rate of spending over time for LTC service. In Metrics #3 and #6, Colorado experienced dramatic increases in the number of members ages 65 and older and the number of dual eligibles who had SUD diagnoses and received an SUD service over the Demonstration. The shift in the age and eligibility of members has resulted in the growth of LTC needs increasing the cost of spending for members who have an SUD diagnosis.
  - Metric #3: The number of individuals with SUD diagnoses who are dual eligibles and age 65 or older has continued to increase over the life of the Demonstration above non-dual eligible and non-elder trends.
  - Metric #6 The number of unduplicated individuals receiving any services who are dual eligibles and age 65 or older increased more than for non-dual eligibles and non-elder members.

Progress Driver Table

Hypothesis Summary	•
(9) Widespread Use of Evidence-Based SUD Specific Patient Placement Criteria Resulting in Reduced Utilization of EDs and Inpatient Hospital Settings for OUD and Other SUD Treatment	• The Demonstration has not led reduced utilization of EDs and inpatient hospital settings for OUD and other SUD treatment.
(10) Improve Outcomes for Members Using SUD Services with Similar or Lower Service Costs	• The total SUD spending grew after the implementation of the Demonstration by $27 million. • the Demonstration has increased the overall budget spent on members with SUD diagnoses slightly. • On a per member basis, the rate of spending was decreasing prior to the Demonstration. After the Demonstration was implemented, there was a one-time decrease in costs with an increased rate of spending. • Non-SUD treatment costs have increased under the Demonstration. • The largest aggregate expenditures are for non-ED outpatient services spending. On a PMPM basis, the non-ED outpatient services are the largest portion of the overall PMPM costs.

Section 8
Interpretations, Policy Implications, and Interactions with Other State Initiatives

The State has implemented most activities from the implementation plan that support waiver implementation. Most activities proposed have been either completed or remain ongoing and new activities, driven by the State legislature, have the potential to continue improvements in SUD services.

The State has revised its Medicaid State Plan to enhance the SUD service continuum under Medicaid. State Medicaid members are now eligible to receive the following ASAM levels of care under their Medicaid benefit: 2.1 IOP SUD Services, 2.5 Partial Hospitalization (effective July 1, 2024), 3.1 Clinically Managed Low Intensity Residential Services, 3.3 Clinically Managed Population Specific High Intensity Residential Services, 3.5 Clinically Managed High Intensity Residential Services, 3.7 Medically Monitored Intensive Inpatient Services, and 3.7WM Medically Monitored Residential WM.

During DY1, the State created a plan and materials to train all providers working within the continuum of care on UM and ASAM-based assessment to ensure the continuum of care would be applied appropriately and to reduce the under- and/or over-utilization of any of the levels of care. Planned activities in the implementation plan included:

- Ensuring appropriate licensure levels of all sites in the system.
- Defining and training providers on treatment terms to ensure consistency.
- Training providers on evidence-based practices for patient assessment and placement.
- Addressing provider shortages, specifically in rural areas and for youth.
- Recruiting providers not currently enrolled as Medicaid providers.

As noted in the conclusion section, the Demonstration has accomplished a substantial portion of the implementation activities but has not resulted in the outcomes sought by the Demonstration. Demonstration efforts to address opioid abuse have been largely successful during the first 2.5 DYs. The number of PDMP users has increased and stakeholders reported that implementation efforts to increase PDMP usage have been successful. Since implementation, the concurrent use opioids and benzodiazepines has decreased, the overall number of opioids dispensed has decreased, and there has been a small decrease in the number of opioid deaths. However, the Demonstration did not seem to have the intended effect on the use of opioids in high dosages.

For example, additional time to address prevention/early intervention service usage is needed. Colorado has examined its SBIRT billing practices. The current Colorado program utilizes the commercial CPT codes 99408 and 99409, which only reimburse when the member has a positive screen with follow-up intervention activities. This billing practice tends to disincentivize providers from performing the SBIRT screens because they are not paid to perform the screen, only to perform the interventions if there is a positive screen. Several states have adopted the Medicaid-specific SBIRT codes H0049 and H0050. These codes reimburse providers whenever a screen is performed regardless of whether or not the screen was positive and intervention activities are required. Colorado could consider adopting these billing practices to enhance Early Intervention in the State. The financial obligation of the State could be a factor under the Medicaid codes because there is an increased budgetary commitment to SUD Early Intervention for using the Medicaid-specific codes.

For retention in care in outpatient, IOP, and lower levels of ASAM residential treatment (e.g., ASAM 3.1 and 3.5), the overall findings seem to suggest that additional care coordination and follow-up after ED visits, WM, and hospitalizations would positively impact the overall outcomes of members through lower readmission rates, more engagement, MAT utilization, and longer retention in care.

As noted above, the Demonstration had increased utilization of WM that may be an indication of lack of effective care transitions and an inability of the Colorado SUD system to retain individuals in long-term SUD treatment. Because there appear to be as many members in WM levels of care (approximately 1500 monthly) as in residential and inpatient treatment (approximately 1500), it suggests that members are not being retained in residential care including ASAM 3.5 and 3.1 treatment and reintegration which would lead to longer term successful outcomes. This is consistent with decreasing engagement statistics, the continued high and growing readmission rates, and stakeholder comments that care transitions are not yet successful.

While the relatively modest increase in the number of members receiving any kind of SUD treatment service appeared to be a one-time increase at the start of the Demonstration, there was an overall increasing trend that was no different than the increase predicted had the Demonstration not been implemented. This was consistent with the initial increase in the number of providers during the first DY, with a decrease the second year and reports about lack of sufficient capacity, particularly in rural areas and with services for specific populations, such as children, pregnant people, and individuals with criminal justice involvement. Providers expressed difficulty in serving people without legal immigration status and those who need services in another language, particularly Spanish.

The results was that the Demonstration did not affect the rate of members initiating AOD treatment for the total Medicaid population. A small increase in the number of SUD treatment providers and a large increase in the number of MAT providers did not translate to increased rates of initiation of treatment or the utilization of overall SUD services or MAT services for the Medicaid population.

The activities implemented have not yet translated into results as reported by Demonstration stakeholders or as seen in the quantitative data around access to physical healthcare. In addition to the modest increases in access to preventive/ambulatory health services for adult Medicaid members with SUD, the State continues to experience large and growing readmission rates, decreasing engagement statistics, and a disproportionate percentage of the population receiving EM services relative to sustained SUD treatment.

Thus far, there has been a reduction in the continuity of pharmacotherapy for OUD, consistent with the finding that there has not been an increase in MAT services, despite increases in the number of providers. Some providers noted that new programs have been difficult to sustain because initial under-utilization leads to insufficient revenue to sustain them long-term.

As previously noted, care coordination remains an area of potential for the State. While some infrastructure improvements have been made in the form of studies and legislative changes, there remains more work to do to improve care coordination for members.

Findings regarding follow-up after an ED visit were mixed. While follow-up after 30 days improved considerably under the Demonstration, follow-up after seven days decreased during the Demonstration. These findings are consistent with incomplete implementation of total system improvements to care coordination and transitions across levels of care, as well as findings that readmission rates are increasing, engagement statistics are decreasing, and that WM relative to treatment is very high.

Demonstration progress and implementation advances from some short-term outcomes have not completely translated into long-term progress in lowering readmission rates. While the Demonstration intended to reduce readmissions, the rate increased between baseline and the second DY. This may be a reflection of the need to continue to improve access to care across all critical level of care, improve retention in care, improve follow-up after hospitalizations and ED use, and for all populations, as well as the ongoing, but incomplete, work to improve care coordination and treatment level transitions.

The Demonstration has not led reduced utilization of EDs and inpatient hospital settings for OUD and other SUD treatment. As noted above, the Demonstration did not appear to have a positive effect on ED utilization. The observed increasing ED trend is contrary to the goals of the Demonstration and suggests that additional initiatives to prevent additional ED visits are needed. In addition, the post-demonstration changes related to the coverage of hospital IMDs might have stabilized the total number of SUD hospital beds available in the system after the Demonstration implementation. However, the overall trend of increasing inpatient utilization with the Demonstration is not consistent with the goals of the program. These results are consistent with other results that hospital readmission rates under the Demonstration are increasing and that short-term follow-up after ED care is not occurring. Additional interventions seem to be necessary to accomplish the goals of the Demonstration.

Section 9
Lessons Learned and Recommendations

Lessons Learned

As noted above, stakeholders reported that new programs should ensure that financing is stable prior to implementation: “A lesson learned is that we need to be thoughtful when we establish a new program to make sure that all players are at the table and that the funding source is going to be there and be stable and that there is enough utilization to sustain the service and that there is a secure payment stream.”

Recommendations

Based on the capacity issues facing the program, Mercer recommends that Colorado reconvene the Provider Capacity Workgroup to analyze wait lists and “service deserts” to ensure there is adequate access to care.

Because the growth in MAT providers has not translated into more MAT services, Mercer recommends that Colorado work with providers to improve the MAT penetration rates for members with SUD including improving follow-up after WM where MAT is inducted.

Mercer recommends that Colorado consider implementing the recommendations articulated in the 2022 “Bridging the Gaps: Policy Recommendations to Implement a Cohesive Statewide Care Coordination Infrastructure” report including definitions for care coordination services, supporting care coordination infrastructure, care transitions, standards of care, credentials for providing care coordination services, and payment and accountability models.

Mercer recommends that Colorado report findings from the ongoing reviews of residential treatment providers to assess their alignment with ASAM with the Independent Evaluator to ensure this information is accurately reflected in all required reporting.

Mercer recommends that Colorado consider requiring MCEs to have a performance improvement project improving care coordination and transitions of care following ED usage, hospitalization, and WM to improve retention in care, access to primary care, and decreasing readmission rates.

Mercer recommends that Colorado implement intensive training with Level 3.2WM providers on discharge planning and adherence to ASAM principles and monitor these providers to ensure that warm hand-offs occur with lower and higher levels of care to improve MAT continuity and retention in care. A significant redesign of this level of care appears to be needed to adopt the goals of the Demonstration and lead to the recovery of individuals with SUD in Colorado.

Section 10

Attachment A: Evaluation Design Plan

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Centers for Medicare & **Medicaid Services**
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CENlllll FOR "1EDIC41D A CHIP SERVICES

State Demonstrations Group

May23 2022

Tracy Johnson
Colorado Department of Health Care Policy
and Financing 1570 Grant Street
Denver, CO 80203

Dear Ms. Johnson:

The Centers for Medicare & Medicaid Services (CMS) completed its review of the Substance Use Disorder (SUD) Evaluation Design, which is required by the Special Terms and Conditions (STCs), specifically, STC#36, of Colorado's section 1115 demonstration, "Expanding the Substance Use Disorder Continuum of Care" (Project No: 11-W-00336/8), effective through December 31, 2025. CMS determined that the Evaluation Design, which was submitted on September 30, 2021 and revised on April 29, 2022, meets the requirements set forth in the STCs and our evaluation design guidance, and therefore approves the state's SUD Evaluation Design.

CMS has added the approved SUD Evaluation Design to the demonstration's STCs as Attachment E. A copy of the STCs which includes the new attachment, is enclosed with this letter. Io accordance with 42 CFR 431.424, the approved Evaluation Design may now be posted to the state's Medicaid website within thirty days. CMS will also post the approved Evaluation Design as a standalone document, separate from the STCs, on Medicaid.gov.

Please note that an Interim Evaluation Report, consistent with the approved Evaluation Design, is due to CMS one year prior to the expiration of the demonstration, or at the time of the extension application, if the state chooses to extend the demonstration. Likewise, a Summative Evaluation Report, consistent with this approved design, is due to CMS within 18 months of the end of the demonstration period. ln accordance with 42 CFR 431.428 and the STCs, we look forward to receiving updates on evaluation activities in the demonstration monitoring reports.

Page 2 - Ms. Tracy Johnson

We appreciate our continued partnership with Colorado on the Expanding the Substance Use Disorder Continuum of Care section **1115** demonstration. If you have any questions please contact your CMS demonstration team.

Sincerely,

Danielle Daly-S

Oig ally signed by Danielle Daly -S Dae: 2022.05.23 13:54:47 -04'00'

Danielle Daly
Director
Division of Demonstration
Monitoring and Evaluation

cc: Michala Walker State Monitoring Lead CMS Medicaid and CHIP Operations Group

Mercer

Substance Use Disorder 1115 Waiver

Evaluation Design

State of Colorado
April 29, 2022

welcome to brighter

Contents

1

General Background Information

History and Overview

Over the past 20 years, the State of Colorado (Colorado or State), like the rest of the country, has felt the impact of the opioid epidemic and has experienced an increase in the rate of substance use disorder (SUD) diagnosis. Data collected by the Colorado Department of Public Health and Environment between 1999–2017 show that:

- An estimated half a million Coloradans are dependent on alcohol or have used illicit drugs. Nearly 30% (142,000) are Medicaid members.[1]
- Between 2000–2017, 12,821 Coloradans died due to a drug overdose.
- The number of overdose deaths has increased from 7.8 deaths per 100,000 in 2000 to 17.6 deaths per 100,000 in 2017.
- Opioid use is leading the overdose epidemic, accounting for over half of the overdose deaths between 2013 and 2017, two-thirds of which are attributable to prescription opioids.[2]

[1] Colorado Health Institute. *Exploring Options for Residential and Inpatient Treatment of Substance Use Disorder in Health First Colorado*. November 2017. Available at: https://www.colorado.gov/pacific/sites/default/files/HCPF%202017%20Inpatient%20SUD%20Treatment%20Report.pdf

[2] Bol K. Colorado Department of Public Health and Environment. *Drug Overdose Deaths in Colorado. Final Data. 1999-2017*. December 2018.

While opioid overdoses in Colorado rose between 2000 and 2017, other drugs including alcohol and methamphetamine drive the rate of admissions for addiction treatment in the State. In 2017, alcohol was responsible for the majority of treatment admissions, followed by methamphetamine. From 2013 to 2017, methamphetamine-related admissions increased by 63%.[3]

Colorado Medicaid members are particularly affected by SUDs, impacting the health outcomes and cost of this population:

- An estimated 11% of Medicaid members have an SUD diagnosis.[4]
- Twenty-nine percent of those who die from an overdose in Colorado are Medicaid members.
- The most prevalent substances abused among Medicaid members are alcohol and methamphetamine.[5]

The costs to the health care system are clear:

- Though 11% of the Medicaid population, the cost of care for members with a SUD diagnosis accounts for nearly 19% of the total cost of care to the system.
- On average, the annual cost of care for a Medicaid member with an SUD diagnosis is nearly double the cost for one without ($10,445 versus $5,646).
- Members with an SUD diagnosis account for 20% of the State's non-SUD related pharmacy spending.[6]

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[3] Russell S. "Colorado Drug Trends." Drug/Alcohol Coordinated Data System (DACODS), Colorado Department of Human Services Office of Behavioral Health. 2018.

[4] Ibid.

[5] Colorado Health Institute. *Exploring Options for Residential and Inpatient Treatment of Substance Use Disorder in Health First Colorado.* November 2017. Available at: https://www.colorado.gov/pacific/sites/default/files/HCPF%202017%20Inpatient%20SUD%20Treatment%20Report.pdf

[6] Colorado Substance Use Disorder Data Fiscal Year 2017-2018. Colorado Department of Health Care Policy & Financing, Pharmacy and Behavioral Health Data Division. 2019.

Additionally, according to the 2017 Colorado Health Access Survey (CHAS), despite the State's efforts to date, Colorado continues to have an unmet need for SUD treatment.[7] The survey shows that more than 67,000 Coloradans need some type of treatment for drug or alcohol use but do not receive it. Many more Coloradans need treatment but are not ready to seek it.

Although these numbers reflect all Coloradans, given the higher prevalence of SUD among Medicaid members, it is clear that there is a need for more access to services.

Colorado's Medicaid Behavioral Health Delivery System

In 1995, the State implemented the Colorado Medicaid Mental Health Capitation and Managed Care Program in 51 counties, and expanded it to the remaining 12 counties in 1998. Through the program, the State was divided into eight geographic areas and the program was administered by Mental Health Assessment and Service Agencies (MHASAs). In 2004, program operations were transferred to the Department of Health Care Policy and Financing (HCPF) from the Department of Human Services, allowing for more cohesive management.

The waiver for the Mental Health Capitation and Managed Care Program was amended several times. A 2013 amendment — effective from January 1, 2014 through June 30, 2015 — included coverage of SUD treatment services and provided the authority to serve the Medicaid expansion population. In 2015, the Centers for Medicare & Medicaid Services (CMS) approved a waiver renewal from January 1, 2016 to June 30, 2017 incorporating former foster care children, expansion parents, and children age six through 19 with incomes above 100% but at or below 133% of the federal poverty level. The waiver was renewed again from July 1, 2017 to June 30, 2018.

Colorado Medicaid divided the State into seven geographic regions for the ACC. Each region is served by one Regional Accountable Entity (RAE). The RAEs are responsible for promoting physical and behavioral health in each of the seven regions. The RAEs manage a network of primary care physical health providers and specialty behavioral health providers to ensure access to appropriate care for Medicaid members in their region. A critical function of the RAEs is to create a cohesive network of providers that work together seamlessly and effectively to provide coordinated health care services to members.

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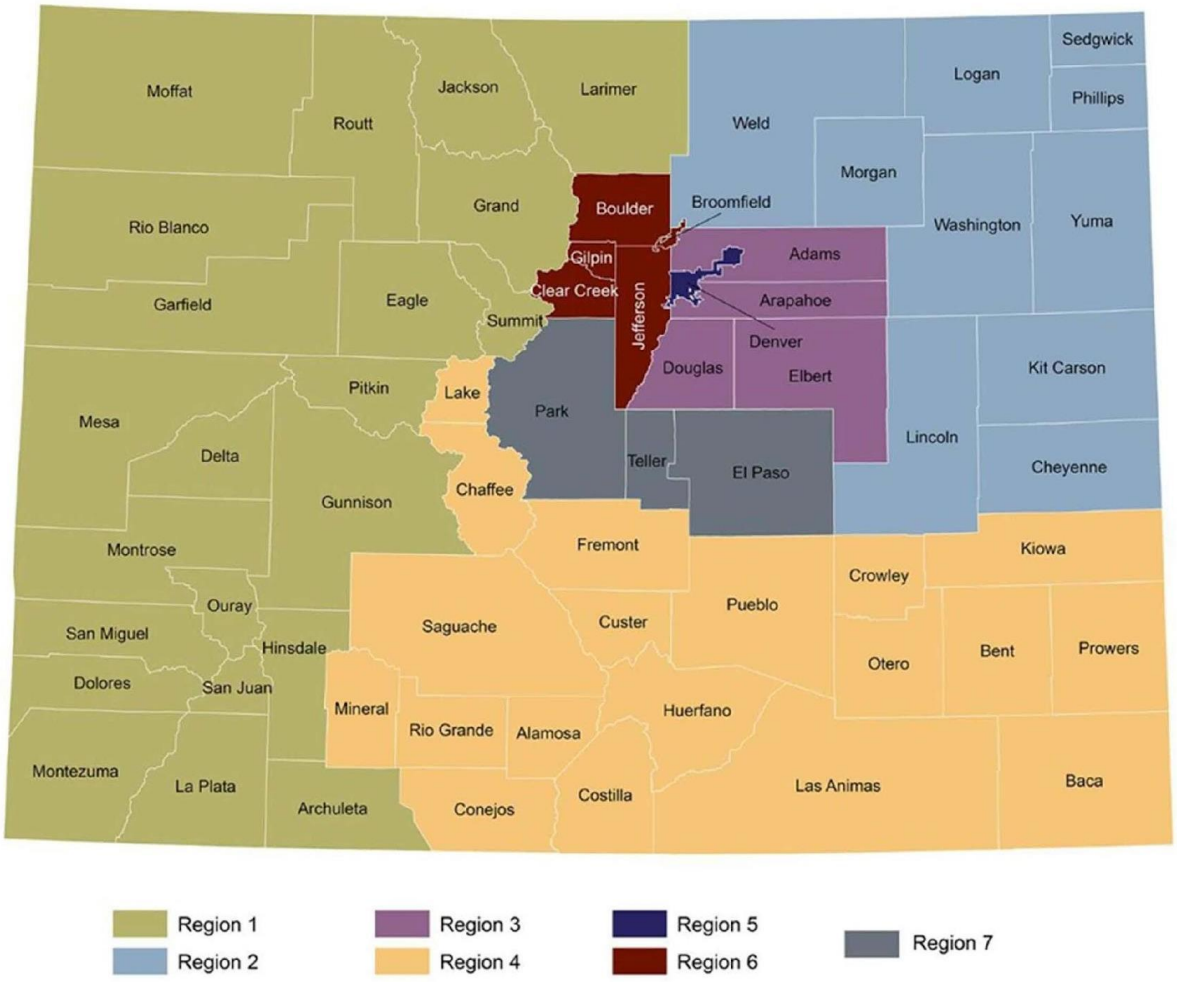
[7] Colorado Health Institute. *2017 Colorado Health Access Survey: The New Normal.* https://www.coloradohealthinstitute.org/research/colorado-health-access-survey-2017

In January 2020, at the direction of the legislature and the governor, the State of Colorado entered into a contract with an additional managed care organization (MCO) to serve the Denver area. This MCO functions similarly to the seven RAEs in rest of the state, but its administrative structure differs from the RAEs. The seven RAEs and the Denver Health MCO will each provide services under this demonstration and data collected from these organizations will be used in the demonstration evaluation. For the remainder of this document the RAEs and the Denver Health MCO will be collectively referred to as Managed Care Entities (MCEs).

Regional Accountable Entity Regions in ACC Phase 2



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Residential Substance Use Disorder Treatment in Colorado

In addition to the capitated behavioral health system, which provides services to Medicaid members, the Colorado Office of Behavioral Health (OBH) contracts with four Managed Service Organizations (MSOs) to deliver a continuum of SUD services that includes inpatient and residential treatment services. MSOs are funded through a combination of state and federal Substance Abuse and Mental Health Services Administration (SAMHSA) block grant dollars, but do not pay for services otherwise covered by Medicaid.

For some Medicaid members, the MSOs provide inpatient residential treatment services, prioritizing injection drug users, parents, and pregnant women. Aside from providing inpatient and residential treatment to priority Medicaid members, the MSOs are required to ensure that people who have no other means of paying for treatment (i.e., based on insurance status or income) receive services funded under their contract with OBH.[8]

The MSOs contract with providers to deliver transitional residential treatment for adults (American Society of Addiction Medicine [ASAM] Level 3.1), Clinically Managed Residential Services (ASAM Level 3.5), Intensive Residential Treatment for adults and adolescents (ASAM Level 3.7), and Strategic Individualized Remediation Treatment (STIRT).

Through this Medicaid Section 1115 waiver, the MCEs will provide residential and inpatient SUD services to Medicaid members. The role of the MSOs will evolve as the new Medicaid benefits take effect and the State looks at options for using SAMHSA grant dollars and MSO infrastructure to enhance the State's overall delivery system.

Federal Grant Efforts to Combat SUDs

To date, Colorado has received three grants from SAMHSA for purposes of combatting the SUD crisis:[9]

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[8] JSI Research and Training Institute, Inc. *A Statewide Evaluation of the effectiveness of Intensive Residential Substance Use Disorder Treatment Provided through Managed Service Organizations.* December 2018.

[9] https://www.colorado.gov/pacific/cHCPF/colorado-state-targeted-response-opioid-crisis

Medication-Assisted Treatment Prescription Drug and Opioid Addiction (MAT-PDOA) Grant

SAMHSA provided $950,000 to the State from September 2016–September 2019. The State used the MAT-PDOA grant to:

- Enhance and expand treatment service systems to increase capacity and provide accessible, effective, comprehensive, coordinated care, and medication-assisted treatment (MAT) to individuals with OUD.
- Enhanced a "hub and spoke" model for the delivery of MAT services and ancillary wraparound services (mental health supports, transportation, childcare, housing, family services).
- Provide MAT services to 763 individuals.

State Targeted Response (STR) Grant

SAMHSA provided $15.7 million to the State from May 2017–April 2019. The State used the STR grant to:

- Conduct a State SUD needs assessment that identified areas where opioid misuse and its harms are most prevalent, what existing activities and funding sources are in place to address the opioid crisis, and gaps in the existing system that need to be addressed.
- Provide medication-assisted treatment (MAT) services to 1,947 individuals, 481 of whom received MAT before or upon release from jail.
- Train 530 prescribers to provide buprenorphine.
- Connect 596 individuals to Peer Recovery Coaches.
- Distribute 27,027 naloxone kits throughout the State.

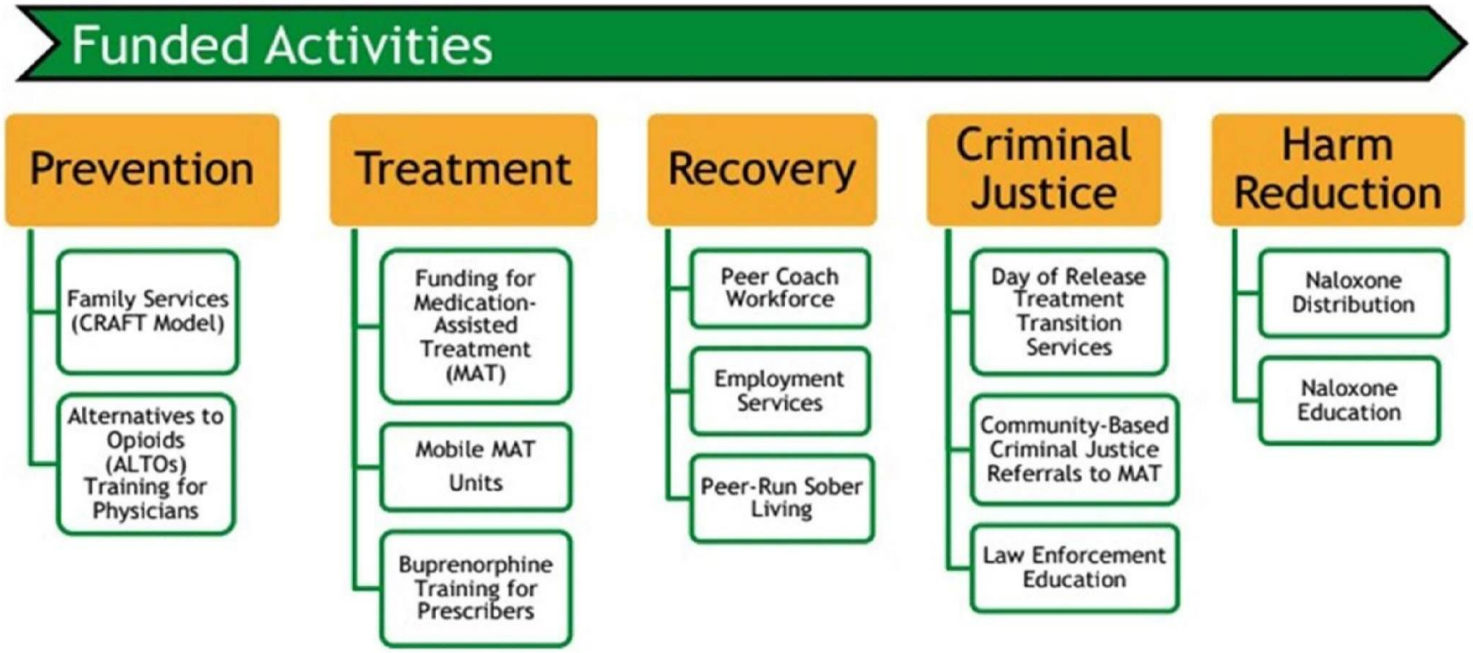
State Opioid Response (SOR) Grant

SAMHSA provided $38 million to the State to extend and expand efforts undertaken through the STR grant until 2020. By the end of the SOR grant period, the State also plans to:

- Connect at least an additional 900 individuals to MAT through mobile MAT units in rural communities.

- Train 400 individuals in the Community Reinforcement and Family Training with Prevention (CRAFT-P) and Celebrating Families models (models focused on supporting family members of individuals struggling with SUDs and how to encourage and motivate loved ones into treatment and/or maintain recovery).
- Hire 18 more Peer Recovery Coaches.
- Train 425 more prescribers with a focus on rural areas.
- Distribute 18,000 more naloxone kits.

A visual summarizing SAMHSA grant-funded activities is below:



Other Efforts to Combat SUDs

Since authorizing medical marijuana use in 2000 and personal marijuana use in 2012, Colorado has collected three types of taxes on marijuana: the State sales tax, a special sales tax, and an excise tax. The taxes generate millions of dollars in revenue for the State, which is used for a variety of health, human services, public safety, and higher education programs and initiatives. Some funds are specific to SUD treatment and services, including:

- Training for health professionals to provide Screening, Brief Intervention, and Referral for Treatment (SBIRT) services for Medicaid clients at risk for substance abuse.
- Increasing access to effective SUD services, including evaluation of intensive residential treatment (the study conducted in conjunction with authorizing legislation for this waiver).
- Implementing programs for adults with co-occurring mental health and SUDs.
- Providing behavioral health services for individuals in rural areas with co-occurring mental health and SUDs.
- Implementing community prevention and treatment for alcohol and drug abuse.
- Providing SUD services at mental health institutes.
- Promoting substance abuse prevention through public awareness campaigns.

In addition to the activities above, Colorado is working to continue to reduce opioid prescriptions and reduce stigma. One of the first changes the State made was to develop the Colorado Consortium for Prescription Drug Abuse Prevention in 2013. The Consortium is a statewide organization with a wide range of participating stakeholders that has numerous workgroups designed to address the opioid crisis, with topics including: provider education; public awareness; use of the Prescription Drug Monitoring Program (PDMP); naloxone; and support for affected friends and families.

Colorado Medicaid has also taken a number of steps over the past five years that have resulted in a more than 50% reduction in the number of pills prescribed and a 44% reduction in the number of Medicaid members taking opioids. Those policy initiatives have been aimed at reducing the number of opioids prescribed to members, tightening criteria when requesting refills, and reducing the daily Morphine Milligram Equivalents (MME) members can take — all while continually ensuring members receive necessary medications for adequate pain management.

Lastly, Colorado's Lift the Label campaign has set a goal of reducing the stigma that prevents those with opioid use disorder (OUD) from getting treatment.

Demonstration Approval

On November 13, 2020, Colorado received approval for its application for a section 1115(a) demonstration titled "Expanding the Substance Use Disorder Continuum of Care" (Project Number 11-W-00336/8) effective January 1, 2021 through December 31, 2025.

Description of the Demonstration

This waiver will provide access to residential and inpatient treatment settings, expand the availability of withdrawal management (WM) services, and increase access to MAT for members with SUD or alcohol use disorder (AUD). These changes will ensure that the most appropriate levels of care are available for patients and improve treatment outcomes.

Colorado will add ASAM levels 3.1 (Clinically Managed Low-intensity Residential Services), 3.3 (Clinically Managed Population-specific High-intensity Residential Services), 3.5 (Clinically Managed High-intensity Residential Services) and 3.7 (Medically Monitored Intensive Inpatient Services), and 3.7-WM (Medically Managed Inpatient Withdrawal Management) as Medicaid-covered services.

We anticipate that this demonstration will accomplish the following goals and objectives, which make up our demonstration hypothesis. This waiver demonstration will:

1. Promote increased access to care for members with SUD.
2. Improve the quality of care for members with SUD.
3. Improve outcomes for members using SUD services and maintain costs.

Capacity Assessment for Expanded Inpatient and Residential Services

In order to implement the new SUD benefit, the State has begun efforts to assess and expand Colorado's existing network of inpatient and residential SUD services, currently managed by MSOs.

The State has been collecting information about availability of inpatient and residential bed capacity, including engaging with a contractor to conduct a provider assessment throughout the State.

The 2015 National Survey of Substance Abuse Treatment Services (N-SAATS) results[10] found that Colorado has between 826–1,276 residential beds, 127–216 of which are designated for inpatient SUD treatment. The Colorado Health Institute, in a report prepared for the Department and submitted to the Colorado General Assembly, estimated that this number of beds can serve between 3,090–5,256 people a year with an average 15-day inpatient average length of stay and 10,050–15,525 people with a 30-day residential average length of stay.[11]

Workforce Development and Training

The State will develop a plan and materials to train all providers working within the continuum of care on utilization management and ASAM-based assessment to ensure that the continuum of care is applied appropriately and to reduce the under- and/or overutilization of any of the levels of care. The Department understands the importance of developing and preparing the workforce to meet the growing demands on the system. Planned activities include:

- Ensuring appropriate licensure levels of all sites in the system.
- Defining and training providers on treatment terms to ensure consistency.
- Training providers on evidence-based practices for patient assessment and placement.
- Addressing provider shortages, specifically in rural areas.
- Recruiting providers not currently enrolled as Medicaid providers.

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[10] Substance Abuse and Mental Health Services Administration (SAMHSA). *National Survey of Substance Abuse Treatment Facilities (N-SSATS): 2015, Data on Substance Abuse Treatment Facilities*. 2015. Available at: https://www.samhsa.gov/data/report/national-survey-substance-abuse-treatment-facilities-n-ssats-2015-data-substance-abuse

[11] Colorado Health Institute. *Exploring Options for Residential and Inpatient Treatment of Substance Use Disorder in Health First Colorado*. November 2017. Available at: https://www.colorado.gov/pacific/sites/default/files/HCPF%202017%20Inpatient%20SUD%20Treatment%20Report.pdf

Other Implementation Planning Activities

The State is aware of the CMS SUD Implementation Plan requirements and is already planning activities that will support successful waiver implementation. The State has conducted a series of robust stakeholder engagement sessions dating back to October of 2018, culminating in the formal public notice and comment process required for this waiver application. The stakeholder engagement process will continue throughout the waiver negotiation period, which we anticipate will facilitate further discussion of waiver details and inform Department planning for any necessary:

- State regulation changes.
- Provider standards and billing manual updates.
- Provider engagement and training needs.
- MCE contract policy and payment rate changes.

Population Impacted

There will be no changes to the Medicaid eligibility criteria included as part of this waiver. The demonstration will be open to all Medicaid members with a covered SUD diagnosis. The demonstration will have no enrollment limits.

Please see the budget neutrality narrative and worksheets in Section 5 of the waiver application for the projected eligible member months for those members who are expected to participate. Table 2, in Section 5 of the application, presents the Without and With Waiver Projections for covering SUD Institution for Mental Disease (IMD) Adults within the Colorado Medicaid program. The member months included in Table 2 reflect the estimated member months for individuals who use SUD IMD. A 2% growth assumption is applied to the member months, which is based on the average rate of enrollment growth estimated for the Medicaid program. The demonstration is not expected to have an impact on the total Medicaid enrollment for the program beyond the typical Medicaid program enrollment growth.

2

Evaluation Questions and Hypotheses

Evaluation questions and hypotheses to be addressed were derived from and organized based on the Driver Diagrams below. The overall aims of the project are to: 1) Promote increased access to care for members with SUD; 2) Improve the quality of care for members with SUD; and 3) Improve outcomes for members using SUD services and maintain costs. To accomplish these aims, the demonstration includes several key activities, organized primary drivers of change:

- Increased rates of identification, initiation, and engagement in treatment.
- Improved access to physical health care.
- Increased adherence to and retention in treatment.
- Reduction in overdose deaths.
- Fewer readmissions to the same or higher level of care
- Reduced emergency department (ED) and hospital admissions for SUD or OUD.

The specific evaluation questions to be addressed were selected based on the following criteria:

1. Potential for improvement, consistent with the key milestones of the demonstration listed above.
2. Potential for measurement, including (where possible and relevant) baseline measures that can help to isolate the effects of Demonstration initiatives and activities over time.
3. Potential to coordinate with ongoing performance evaluation and monitoring efforts.

Research questions were selected to address the demonstration's major program goals, to be accomplished by demonstration activities associated with each of the primary drivers. Specific hypotheses regarding the demonstration's impact are posed for each of these evaluation questions. These are linked to the primary drivers in the diagrams and tables beginning in Section 2 "Driver Diagrams, Research Questions and Hypotheses," directly following the next section "Targets for Improvement".

Targets for Improvement

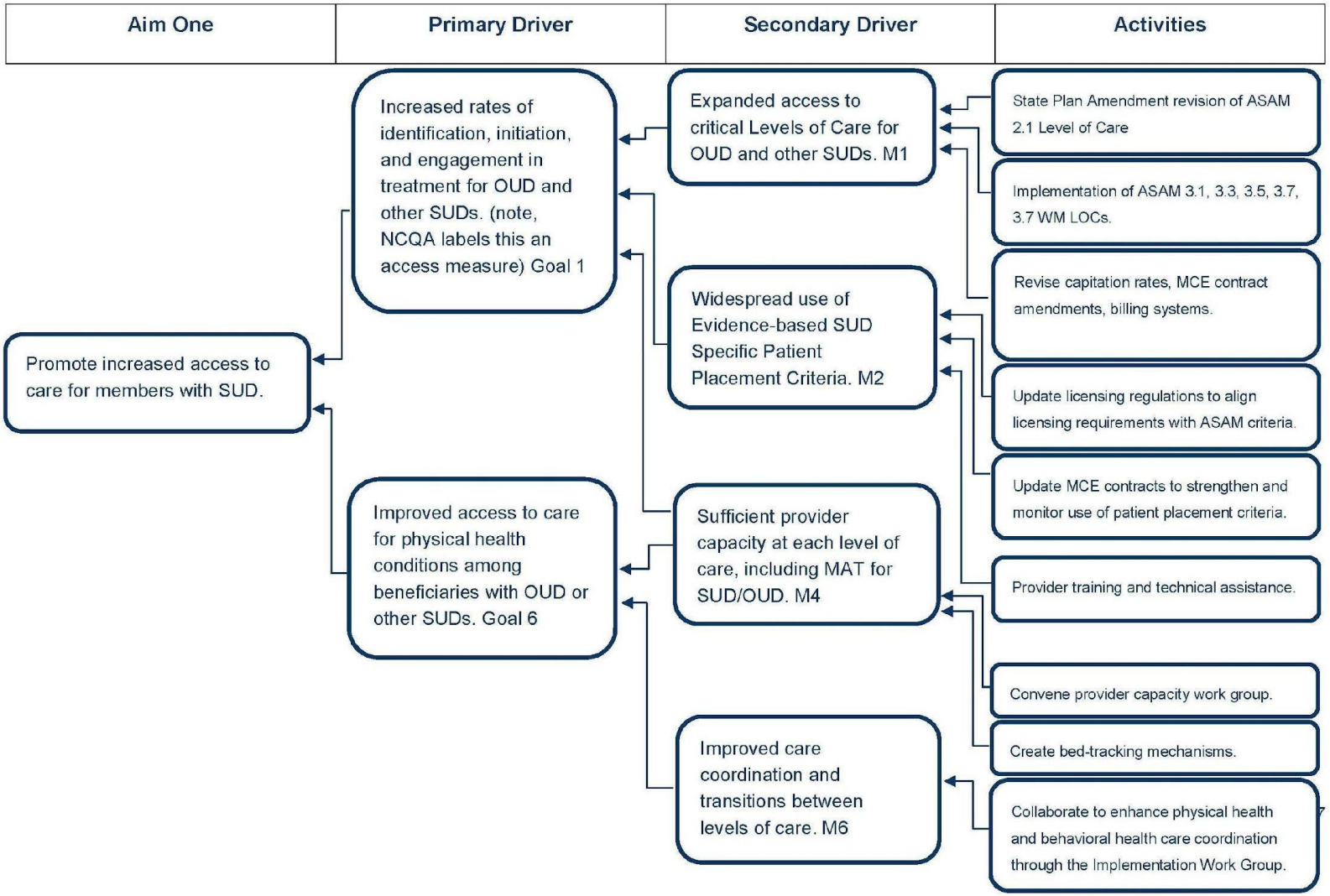
The six goals of the SUD waiver with Targets for Improvement are listed in the table below.

Targets for Improvement

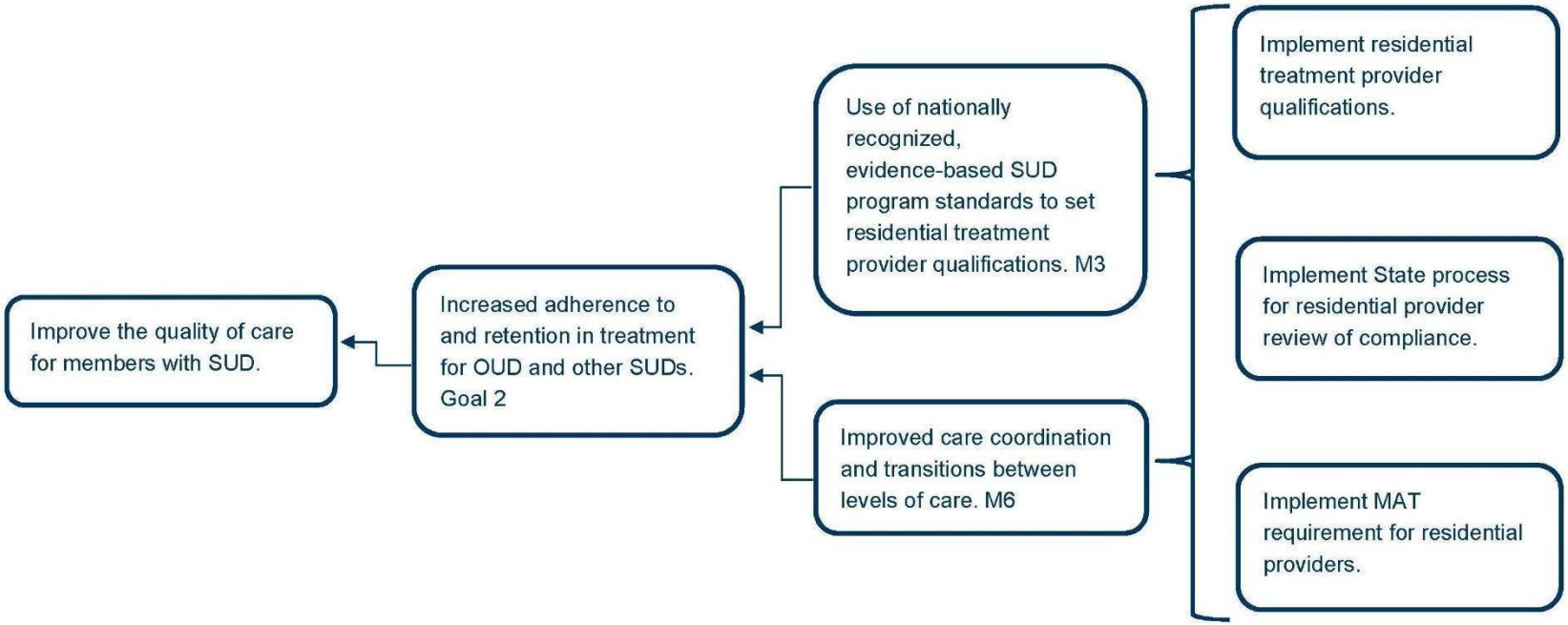
Program Goals (Primary Drivers)	Targets
Increased rates of identification, initiation, and engagement in treatment	• Increased access to critical levels of care for OUD and other SUDs. • Increased use of Evidence-based SUD Specific Patient Placement Criteria.
Increased adherence to and retention in treatment	• Increased use of nationally recognized, evidence-based SUD program standards to set residential treatment provider qualifications. • Improved care coordination and transitions between levels of care.
Reductions in overdose deaths, particularly those due to opioids	• Increased use of comprehensive treatment and prevention strategies to address opioid abuse and OUD. • Increased provider capacity at each level of care, including MAT for SUD/OUD.
Reduced utilization of EDs and inpatient hospital settings for treatment where the utilization is preventable or medically inappropriate through improved access to other continuum of care services	• Increased use of Evidence-based SUD Specific Patient Placement Criteria. • Increased provider capacity at each level of care, including MAT for SUD/OUD.
Fewer readmissions to the same or higher level of care where the readmission is preventable or medically inappropriate	• Increased use of Evidence-based SUD Specific Patient Placement Criteria. • Improved care coordination and transitions between levels of care.
Improved access to care for physical health conditions among beneficiaries	• Improved care coordination and transitions between levels of care for physical care. • Increased use of comprehensive treatment and prevention strategies to address opioid abuse and OUD.

Driver Diagrams, Research Questions and Hypotheses

The three program aims represent the ultimate intentions of the waiver. The primary drivers are strategic improvements or goals to achieve the program aims. The secondary drivers are the interventions (milestones) that will need to be reached in order achieve the strategic improvements. The performance measures outlined with the research question and hypothesis for each milestone describe specific activities completed as part of the implementation. The driver diagrams below present the connections between the program activities, milestones, strategic improvements, and aims.


Aim One
Primary Driver
Secondary Driver
Activities
Promote increased access to care for members with SUD.
Increased rates of identification, initiation, and engagement in treatment for OUD and other SUDs. (note, NCQA labels this an access measure) Goal 1
Improved access to care for physical health conditions among beneficiaries with OUD or other SUDs. Goal 6
Expanded access to critical Levels of Care for OUD and other SUDs. M1
Widespread use of Evidence-based SUD Specific Patient Placement Criteria. M2
Sufficient provider capacity at each level of care, including MAT for SUD/OUD. M4
Improved care coordination and transitions between levels of care. M6
State Plan Amendment revision of ASAM 2.1 Level of Care
Implementation of ASAM 3.1, 3.3, 3.5, 3.7, 3.7 WM LOCs.
Revise capitation rates, MCE contract amendments, billing systems.
Update licensing regulations to align licensing requirements with ASAM criteria.
Update MCE contracts to strengthen and monitor use of patient placement criteria.
Provider training and technical assistance.
Convene provider capacity work group.
Create bed-tracking mechanisms.
Collaborate to enhance physical health and behavioral health care coordination through the Implementation Work Group.

Aim Two	Primary Driver	Secondary Driver	Activities



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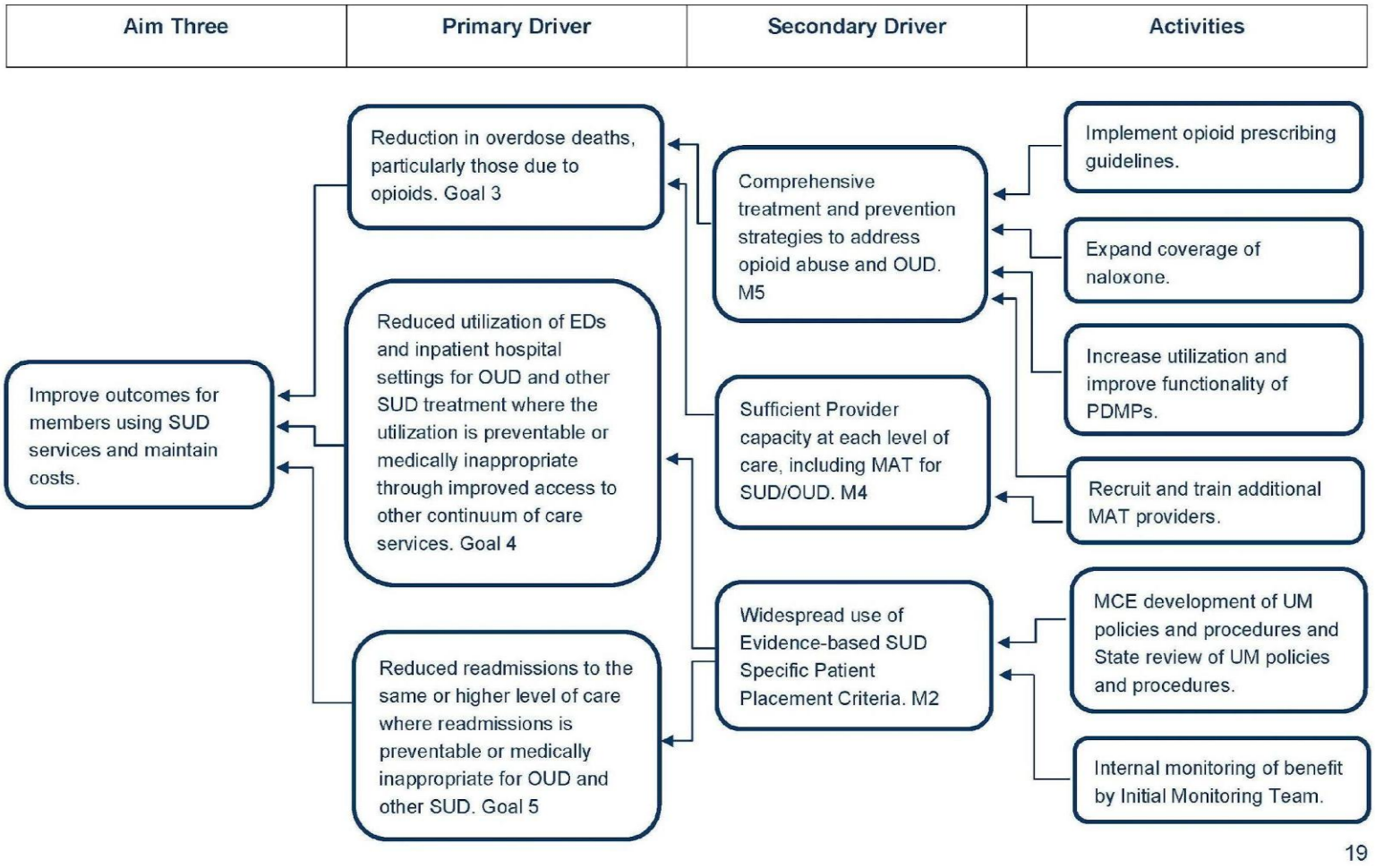

Aim Three
Primary Driver
Secondary Driver
Activities
Improve outcomes for members using SUD services and maintain costs.
Reduction in overdose deaths, particularly those due to opioids. Goal 3
Reduced utilization of EDs and inpatient hospital settings for OUD and other SUD treatment where the utilization is preventable or medically inappropriate through improved access to other continuum of care services. Goal 4
Reduced readmissions to the same or higher level of care where readmissions is preventable or medically inappropriate for OUD and other SUD. Goal 5
Comprehensive treatment and prevention strategies to address opioid abuse and OUD. M5
Sufficient Provider capacity at each level of care, including MAT for SUD/OUD. M4
Widespread use of Evidence-based SUD Specific Patient Placement Criteria. M2
Implement opioid prescribing guidelines.
Expand coverage of naloxone.
Increase utilization and improve functionality of PDMPs.
Recruit and train additional MAT providers.
MCE development of UM policies and procedures and State review of UM policies and procedures.
Internal monitoring of benefit by Initial Monitoring Team.

19

Measuring Effects on the Three Aims

CMS has established milestones and performance measures associated with those milestones to achieve the goals of the waiver. Some of those performance measures being used to monitor progress of the activities can also be used to indicate that the program aims have been met. Ultimately, the activities and milestones organized under the six primary drivers (goals) of:

- Increased rates of identification, initiation, and engagement in treatment.
- Improved access to physical health care.
- Increased adherence to and retention in treatment.
- Reduction in overdose deaths.
- Reduced admissions to higher levels of care.
- Reduced ED and hospital admissions for SUD or OUD.

The activities and milestones are designed to further the three main project aims:

- Promote increased access to care for members with SUD.
- Improve the quality of care for members with SUD.
- Improve outcomes for members using SUD services and maintain costs.

For the outcome evaluation, select performance measures will be used to demonstrate observed changes in outcomes, using an interrupted time-series (ITS) design where sufficient pre-demonstration data is available, or with pre-post comparisons or comparisons to national benchmarks where sufficient pre-demonstration data is not available. Additional performance measures will be collected to monitor progress on meeting the milestones and project goals. These performance measures are grouped and described under the related primary drivers.

The research design table in Section 3, outlines the research questions and hypotheses of the evaluation, organized by each primary driver.

3

Methodology

Evaluation Design

The evaluation of the Colorado SUD 1115 waiver will utilize a mixed-methods evaluation design with three main goals:

1. Describe the progress made on specific waiver-supported activities (process/implementation evaluation).
2. Demonstrate change/accomplishments in each of the waiver milestones (short-term outcomes).
3. Demonstrate progress in meeting the overall project goals/aims.

A combination of qualitative and quantitative approaches will be used throughout the evaluation. Qualitative methods will include key informant interviews with Department and provider staff, MSOs, and other identified stakeholders regarding waiver activities, as well as document reviews of contracts, policy guides, and manuals. Quantitative methods will include descriptive statistics and time series analyses showing change over time in both counts and rates for specific metrics and ITS analysis to assess the degree to which the timing of waiver interventions affect changes across specific outcome measures.

Qualitative analysis will include document review and interviews with key informants. It will identify and describe the SUD service delivery system and changes occurring during the demonstration for Medicaid enrollees in the eligible population. Each of the milestones will be discussed and documented. This will allow identification of key elements Colorado intends to modify through the demonstration and measure the effects of those changes. Using a combination of case study methods, including document review, telephone interviews, and face-to-face meetings, a descriptive analysis of the key Colorado demonstration features will be conducted.

The evaluation will analyze how the State is carrying out its implementation plan and track any changes it makes to its initial design as implementation proceeds. Both planned changes that are part of the demonstration design (e.g., expansion of ASAM) and operational and policy modifications the State makes based on changing circumstances will be identified. Finally, it is possible that, in some instances, changes in the policy environment in the State will trigger alterations to the original demonstration implementation plan.

During ongoing communication with the State, detailed information on how Colorado has implemented each milestone, including how it has structured the ASAM expansion, identified providers at each ASAM level, implemented PDMP[12] and other Health Information Technology (HIT) changes, and structured care coordination between levels of care for beneficiaries enrolled in the demonstration, will be collected. The evaluation will analyze the scope of each of these milestones as implemented, the extent to which they conduct these functions directly or through contract, and internal structures established to promote implementation of the milestones.

Key informant interviews and document reviews will occur at four critical junctures: initially, prior to the mid-point assessment, prior to the interim evaluation report being written, and prior to the final summative evaluation report being finalized.

The key informant interviews will be conducted with staff members in the following departments who are directly responsible for SUD 1115 implementation and operations: HCPF, OBH, MSOs, MCEs, and service providers.

To maximize efficiency in the evaluation, most outcome measures align with performance measures being reported to CMS for each of the six milestones. As the independent evaluator/contractor, Mercer Government Human Services Consulting (Mercer) will calculate the quantitative performance measures, according to metrics specifications, and based on data provided by both HCPF and OBH, along with other State agencies, as needed. Mercer is currently receiving monthly transfers of Colorado's Medicaid Management Information System (MMIS) data, and quarterly transfers of MCE behavioral health data, from IBM through a Health Insurance Portability and Accountability Act

(HIPAA)-compliant secure portal. Mercer is also arranging to receive pre-demonstration detailed claims data on inpatient and residential SUD services from OBH, which coordinated residential and inpatient services with block grant funding prior to implementation of the demonstration in 2021. Mercer will calculate all performance measures using the period of time specified in the CMS technical manual (e.g., monthly, quarterly, or annually).

The demonstration is open to all adult non-expansion and expansion members, so a concurrent comparison group of Colorado Medicaid members is not available. Outcomes will be assessed, where possible, using an ITS quasi-experimental design. The ITS analysis projects metrics derived from a pre-demonstration time period into the post-demonstration implementation time period as a comparison for actual post-demonstration implementation metrics. In cases where there are not enough data points for reliable projects (e.g., annual measures) we will use a basic time series analysis, or pre-post analyses, to describe changes over time.

Target and Comparison Populations

Because there is not an available comparison population, the "comparison population groups" in this design will be a projection of each measure, based on historical data, of what the group would look like in the absence of the demonstration.

The Target population includes non-expansion and expansion adult Colorado Medicaid beneficiaries with an SUD diagnosis. Based on demonstration goals and activities, we do not anticipate that the demonstration will have ***intentional*** differential impacts on specific subgroups. However, to account for known long-term disparities in access to care, engagement, and outcomes, we will use some demographic categories as covariates in our analyses. Additionally, some covariates based on OUD diagnosis will be used in examining changes in specific SUD utilization metrics. Other specified subpopulations (dual eligible, pregnant women, and the criminal justice population) will likely have insufficient data to provide reliable analysis. However, if the sample size permits, we will split the sample by subpopulations and will run interrupted time series or regression analyses. This will allow for an examination of the trend/slopes of the estimated effects to see if there are differences across subpopulations. All members who are eligible for and/or receive services will be included in all descriptive time series and ITS analysis, so no sampling strategy is needed.

Evaluation Period

The evaluation period is January 1, 2021, through December 31, 2025. The Draft Summative Evaluation Report analysis will allow for a

three-month run out of encounter data. Results across this time period will be included in the Draft Summative Evaluation Report due to CMS by June 30, 2027. Draft interim results derived from a portion of this evaluation period, January 1, 2021, through June 30, 2023 (with three months run out of encounter data) will be reported in the Draft Interim Evaluation Report due to CMS on June 30, 2024.

12 In Colorado, State staff are statutorily barred from accessing PDMP data. Evaluations requiring PDMP data will be limited to the annual report that is made public.

Evaluation Measures and Data Sources

The evaluation design and evaluation measures are based on sources that provide valid and reliable data that will be readily available throughout the demonstration and final evaluation. To determine if data to be used for the evaluation are complete and accurate, the independent evaluator will review the quality and completeness of data sources (including but not limited to claims and encounters for pharmacy, professional, and facility services as well as eligibility data). Example analyses the independent evaluator will use to determine reliability and accuracy of encounter data include, but are not limited to: frequency reports, valid values, missing values, date and numerical distributions, duplicates (part of adjustment logic), and encounter to cost report comparisons.

As often as possible, measures in the evaluation have been selected from nationally recognized measure stewards for which there are strict data collection processes and audited results. Information from additional data sources, such as the Department of Health and Environment, OBH, and Pharmacy Boards will be assessed for completeness and accuracy to the best of the ability of the independent evaluator and based on State knowledge of the provider community and experience in Colorado.

The following tables summarize: the primary drivers and hypotheses, process (implementation) and outcome measures for the evaluation, measure steward (if applicable), numerator and denominator definitions where appropriate, types of data (quantitative or qualitative), and data sources.

Mercer will calculate all performance measures for the demonstration period using claims/encounters data from IBM and encounter data from the MCEs, except for overdose deaths, which is calculated using vital statistics data maintained by the Colorado Department of Health and Environment. The period before the waiver demonstration will also include encounter data obtained from OBH, which was providing inpatient and residential SUD services for most of the Medicaid population (with the exception of pregnant women and young adults up to age 21, who were eligible for some inpatient and residential services through Medicaid) with block grant funding prior to the demonstration implementation. This data is important to provide a full picture of the services Medicaid members were receiving prior to the waiver, even though those services were not paid by Medicaid and will therefore not be in the data sets provided by IBM. Mercer will use similar methods of data testing and validation of for both the OBH and IBM data sets where possible, as discussed on page 23 and 47 of this document. We will also conduct qualitative interviews of OBH and HCPF staff once preliminary forecasts of trends are complete to provide a face validity check of the OBH data.

The State considered the possibility of using Transformed Medicaid Statistical Information System (T-MSIS) Analytical Files (TAF) Research Identifiable Files (RIF) for baseline comparisons, but feels that pursuing the OBH data will provide a more accurate description of the

pre-demonstration landscape for SUD services in Colorado. The majority of inpatient and residential SUD services provided to Colorado Medicaid members would not be captured in the TAF-RIF data prior to the start of the demonstration in 2021.

HCPF is working closely with OBH to determine data quality and utility. While this analysis is not yet complete, it will be well in advance of the evaluation analysis. HCPF will notify CMS once we have a full assessment complete. In the case that the OBH data is unavailable or un-useable, the evaluation will add comparisons of select outcome measures with questions from the National Survey on Drug Use and Health (NSDUH) or the CMS Medicaid Adult Core Set to provide context to Colorado's demonstration within the national trends.

AIM ONE: Promote increased access to care for members with SUD.

Research question	Measure	Measure Steward	Time Period	Numerator	Denominator[a]	Data Sources	Analytic Method
	Primary Driver: Increased rates of identification, initiation, and engagement in treatment for OUD and other SUDs. **Hypothesis 1: The Demonstration will expand access to critical levels of care for OUD and other SUDs, resulting in increased rates of identification, initiation, and engagement in treatment for OUD and other SUDs. (IP M1)**						
Research Question 1: Have critical levels of care been revised and expanded to align with ASAM standards? **(Process Question)**	Revision of ASAM level 2.1 Intensive outpatient SUD services and implementation of ASAM Levels of Care: 3.1, 3.3, 3.5, 3.7, and 3.7 WM, including access to MAT.	N/A	Cumulative for interim reporting period, and for summative reporting period.	None	None	Key Informant Interviews (HCPF, OBH staff, MCE representatives; Document Review (MCE policies and procedures, provider contracts)	Thematic analysis of interviews, policies, and contracts
	Develop MCE rate methodology and update MCE contracts with capitation rates, which include revised continuum of services.	N/A	Cumulative for interim reporting period, and for summative reporting period.	None	None	Key Informant Interviews; Document Review (MCE policies and procedures, provider contracts)	Thematic analysis of interviews and contracts, policies, and contracts
Research Question 2: Has increased access to critical levels of care resulted in increased rates	Number/percent of beneficiaries who receive prevention or early intervention services (CMS #7).	CMS	Monthly	Number of unique members in the denominator with a service claim for early intervention services	Members with a SUD diagnosis (CMS #3) for percentage	Claims/ encounters	ITS; controlling for demographic subgroups

Research question	Measure	Measure Steward	Time Period	Numerator	Denominator[a]	Data Sources	Analytic Method
of identification, initiation, and engagement in treatment for OUDs and other SUDs as measured by utilization?				(e.g., procedure codes associated with SBIRT).			
	Number/percent of beneficiaries who use outpatient services (CMS #8).	CMS	Monthly	Number of unique members in the denominator with a claim for outpatient services for SUD (e.g., outpatient recovery or motivational enhancement therapies, step-down care, and monitoring for stable patients).	Members with a SUD diagnosis (CMS #3) for percentage	Claims/ encounters	ITS; controlling for demographic subgroups
	Number/percent of beneficiaries who use intensive outpatient and partial hospitalization services (CMS #9).	CMS	Monthly	Number of unique members in the denominator with a service or pharmacy claim for intensive outpatient and/or partial hospitalization services for SUD (e.g., specialized outpatient SUD	Members with a SUD diagnosis (CMS #3) for percentage	Claims/ encounters	ITS; controlling for demographic subgroups

Research question	Measure	Measure Steward	Time Period	Numerator	Denominator[a]	Data Sources	Analytic Method
				therapy and other clinical services).			
	Number/percent of beneficiaries who use residential and/or inpatient services for SUD (CMS #10).	CMS	Monthly	Number of unique members in the denominator with a service for residential and/or inpatient services for SUD.	Members with a SUD diagnosis (CMS #3) for percentage Include OBH data in numerator for baseline years	Claims/ encounters	ITS; controlling for demographic subgroups
	Number/percent of beneficiaries who use WM services (CMS #11).	CMS	Monthly	Number of unique members in the denominator with a service or pharmacy claim for withdrawal management services.	Members with a SUD diagnosis (CMS #3) for percentage	Claims/Encounters Include OBH data in numerator for baseline years	ITS; controlling for demographic subgroups
	Number and length of IMD stays for SUD (CMS #36).	CMS	Yearly	Total number of days in an IMD for inpatient/ residential discharges for SUD.	Total number of discharges from an IMD for beneficiaries with an inpatient or residential treatment stay for SUD.	Claims/Encounters Include OBH data in numerator for baseline years	Descriptive Time Series; pre-post one-way ANCOVA comparing baseline average to post-demonstration average, controlling for demographic subgroups

Research question	Measure	Measure Steward	Time Period	Numerator	Denominator[a]	Data Sources	Analytic Method
Hypothesis 2: The demonstration will promote widespread use of evidence-based SUD specific patient placement criteria resulting in increased rates of identification, initiation, and engagement in treatment for OUD and other SUDs. (IP M2)							
Research Question 1: Has widespread use of ASAM patient placement criteria been implemented? **(Process Question)**	Number/percent of providers licensed at each level of care.	Evaluator, with input from the agency collecting the data	Yearly	Number of providers in the denominator licensed at each level of care.	Total number of SUD providers (CMS #13) for percentage	OBH licensing records	Descriptive time series; pre-post chi square test of significance comparing baseline proportion to post-demonstration period proportion (for each level of care)
	Description of activities to monitor MCE use of ASAM criteria for patient placement.	N/A	Cumulative for interim reporting period, and for summative reporting period.	None	None	Key Informant interviews and document review from MCEs; OBH monitoring records	Thematic analysis of interviews and documents
	Description of training and technical assistance activities to align providers with ASAM standards.	N/A	Cumulative for interim reporting period, and for summative reporting period.	None	None	Key Informant interviews and document review with SUD providers	Thematic analysis of interviews and documents
Research Question 2: Has the widespread use of ASAM patient	Number/percent of beneficiaries receiving any SUD treatment service (CMS #6).	CMS	Monthly	Number of unique members in the denominator receiving at least one SUD	Number of unique members enrolled in the measurement period (for percentage)	Claims/ Encounters Include OBH data in numerator for baseline years	ITS; controlling for demographic subgroups Compare to NSDUH "Received Any

Research question	Measure	Measure Steward	Time Period	Numerator	Denominator[a]	Data Sources	Analytic Method
placement criteria resulted in increased rates of identification, initiation, and engagement in treatment for members with SUD diagnoses?				treatment service or pharmacy claim during the measurement period.	Subpopulations: OUD, Age, Dual, Pregnant, Criminal Justice		Substance Use Treatment in the Past Year" as benchmark if OBH data is not available/useable for ITS
	Initiation of Alcohol and Other Drug (AOD) Abuse or Dependence Treatment (IET-AD) (CMS #15)	NCQA NQF #0004	Yearly	Number of unique members in the denominator who initiate treatment through an inpatient AOD admission, outpatient visit, intensive outpatient encounter or partial hospitalization, telehealth, or medication treatment within 14 days of the diagnosis.	Number of unique members with a new episode of AOD abuse or dependence	Claims/ Encounters Include OBH data in numerator for baseline years	Descriptive time series; pre-post chi square test of significance comparing baseline proportion to post-demonstration period proportion Compare to CMS Medicaid Adult Core Set national median as benchmark if OBH data is not available/ useable
	Engagement of Alcohol and Other Drug Abuse or Dependence Treatment (IET-AD) (CMS #15).	NCQA NQF #0004	Yearly	Number of unique members in the denominator who were engaged in	Number of unique members with a new episode of AOD abuse or dependence and	Claims/ Encounters Include OBH data in numerator for baseline years	Descriptive time series; pre-post chi square test of significance comparing baseline proportion to

Research question	Measure	Measure Steward	Time Period	Numerator	Denominator[a]	Data Sources	Analytic Method
				ongoing AOD treatment within 34 days of the initiation visit.	initiated treatment		post-demonstration period proportion Compare to CMS Medicaid Adult Core Set national median as benchmark if OBH data is not available/ useable
Hypothesis 3: The demonstration will promote sufficient provider capacity at each level of care, including MAT, for SUD/OUD, resulting in increased rates of identification, initiation, and engagement in treatment for OUD and other SUDs. (IP M4)							
Research Question 1: Is there sufficient provider capacity at each level of care, including MAT? **(Process Question)**	Description of Provider Capacity Workgroup activities.	N/A	Cumulative for interim reporting period, and for summative reporting period.	None	None	Key informant interviews; document review	Thematic analysis of interviews and documents
	Number/percent of providers participating in IT MATTRs forums.	Evaluator , with input from the agency collecting the data	Yearly	Number unique providers in the denominator who are participating in IT MATTRs forums.	Number of SUD providers that can deliver MAT (CMS #14) for percentage	HCPF	Descriptive statistics (counts); pre-post chi square test of significance comparing baseline proportion to post-demonstration period proportion

Research question	Measure	Measure Steward	Time Period	Numerator	Denominator[a]	Data Sources	Analytic Method
Research Question 2: Has the availability of providers in Medicaid accepting new patients, including MAT, improved under the demonstration?	Number of eligible SUD providers. (CMS #13).	CMS	Yearly	Number of providers who were enrolled in Medicaid and qualified to deliver SUD services.	None	HCPF	Descriptive time series
	Number/percent of eligible SUD providers that can deliver MAT (CMS #14).	CMS	Yearly	Number of providers who were enrolled in Medicaid and qualified to deliver SUD services and who meet the standards to provide MAT services.	Number of SUD Providers (CMS #13) for percentage	HCPF	Descriptive time series; pre-post chi square test of significance comparing baseline proportion to post-demonstration period proportion
	Total number of beds available (Bed capacity)	Evaluator, with input from the agency collecting the data	Yearly	Total number of beds available in residential and inpatient facilities.	None	OBH electronic bed tracking system HCPF	Descriptive time series
Primary Driver: Improved access to care for physical health conditions among beneficiaries with OUD or other SUDs							
Hypothesis 4: The demonstration will improve care coordination for physical care, resulting in improved access to care for physical health conditions among beneficiaries with OUD or other SUDs. (IP M6)							

Research question	Measure	Measure Steward	Time Period	Numerator	Denominator[a]	Data Sources	Analytic Method
Research Question 1: Has the demonstration implemented changes that improve care coordination for physical care? **(Process Question)**	Description of MCE Care Coordination activities determined by SUD Implementation Workgroup.	N/A	Cumulative for interim reporting period, and for summative reporting period.	None	None	SUD Implementation Workgroup member interview; document review	Thematic analysis of interviews and documents
Research Question 2: Has improving care coordination resulted in increased utilization of physical health services for members with SUD diagnoses?	Access to Preventive/ Ambulatory Health Services for Adult Medicaid Beneficiaries with SUD (AAP) [Adjusted HEDIS measure] (CMS #32).	NCQA	Yearly	Number of unique members with SUD with an ambulatory or preventative care visit.	Number of unique members with a SUD diagnosis (CMS #4)	Claims	Descriptive time series; pre-post chi square test of significance comparing baseline proportion to post-demonstration period proportion

AIM TWO: Improve the quality of care for members with SUD.

Research question	Measure	Measure Steward	Time Period	Numerator	Denominator[a]	Data Sources	Analytic Method
Primary Driver: Increased adherence to and retention in treatment for OUD and other SUDs							
Hypothesis 1: The 1115 SUD demonstration will implement use of nationally recognized, evidence-based SUD program standards to set residential treatment provider qualifications resulting in increased adherence to and retention in treatment for OUD and other SUDs.							
Research Question 1: Have evidence-based SUD program standards been used in evaluating residential treatment provider qualifications? **(Process Question)**	Number/percent of providers licensed for each ASAM level of care they provide.	Evaluator, with input from the agency collecting the data	Yearly	Number of providers licensed for each ASAM level of care they provide.	Number of SUD providers (CMS #13) for percentage	OBH	Descriptive time series; pre-post chi square test of significance comparing baseline proportion to post-demonstration period proportion (for each level of care)
	Number and rate of providers reviewed for compliance.	Evaluator, with input from the agency collecting the data	Yearly	Number of unique SUD providers reviewed for compliance.	Number of SUD providers (CMS #13) for rate	MCE credentialing records/HCPF	Descriptive time series; pre-post chi square test of significance comparing baseline proportion to post-demonstration period proportion
	Number/percent of residential and inpatient providers who provide onsite access, or who facilitate access to MAT.	Evaluator, with input from the agency collecting the data	Yearly	Number of residential and inpatient SUD providers who provide onsite access, or who facilitate access to MAT.	Number of unique SUD residential and inpatient providers for percentage	HCPF	Descriptive time series; pre-post chi square test of significance comparing baseline proportion to post-demonstration period proportion

Research question	Measure	Measure Steward	Time Period	Numerator	Denominator[a]	Data Sources	Analytic Method
Research Question 2: Has increased utilization of SUD program standards for SUD residential treatment resulted in increased adherence and retention in treatment?	Continuity of Pharmacotherapy for OUD (CMS #22).	USC	Yearly	Number of unique members in the denominator who have at least 180 days of continuous treatment.	Number of unique members with OUD diagnosis and at least one claim for an OUD medication. Stratify on residential/ inpatient versus outpatient services	Claims/encounters Include OBH data in numerator for baseline years	Descriptive time series; pre-post chi square test of significance comparing baseline proportion of members initiating treatment to post-demonstration period
	Number/percent of beneficiaries who have a claim for MAT for SUD during the measurement period (CMS #12).	CMS	Monthly	The number of unique members in the denominator who have a claim for a MAT dispensing event for SUD.	Members with a SUD diagnosis (CMS #3) for percentage Stratify on residential/ inpatient versus outpatient services	Claims/encounters Include OBH data in numerator for baseline years	ITS; controlling for demographic subgroups Compare to NSDUH "Received Medication-Assisted Treatment for Opioid Misuse in the Past Year" as benchmark if OBH data is not available/useable for ITS
Hypothesis 2: The 1115 SUD demonstration will improve care coordination and transitions between levels of care qualifications resulting in increased adherence to and retention in treatment for OUD and other SUDs.							
Research Question 1: Have the MCEs	Description of activities to enhance care	N/A	Cumulative for interim reporting	None	None	Key informant interviews of SUD Implementation	Thematic analysis of interviews and contracts

Research question	Measure	Measure Steward	Time Period	Numerator	Denominator[a]	Data Sources	Analytic Method
implemented policies to enhance care coordination?	coordination through the Implementation Work Group.		period, and for summative reporting period.			Workgroup members; document review (e.g. contracts)	
	MCE policy development to ensure adequate care coordination across the SUD continuum.	N/A	Cumulative for interim reporting period, and for summative reporting period.	None	None	Key informant interviews of SUD Implementation Workgroup members; document review (e.g. contracts)	Thematic analysis of interviews and contracts
	Number/rate of licensed residential care facilities.	Evaluator, with input from the agency collecting the data	Yearly	Number of licensed residential care facilities.	Number of licensed residential care facilities	OBH	Descriptive statistics (counts); pre-post chi square test of significance comparing baseline proportion to post-demonstration period proportion
Research Question 2: Has enhanced care coordination across the SUD continuum of care resulted in increased follow up after an ED visit?	Follow-Up After Emergency Department Visit for Alcohol and Other Drug Abuse or Dependence (FUA-AD) (CMS #17-1).	NCQA	Yearly	Number of ED visits for members in the denominator who had a follow-up visit for AOD abuse or dependence within: • 30 days • 7 days	Number of ED visits for members with a principal diagnosis of AOD abuse or dependence.	Claims/encounters	Descriptive time series; pre-post one-way ANCOVA comparing baseline average to post-demonstration average, controlling for demographic subgroups Also compare to CMS Medicaid Adult Core

Research question	Measure	Measure Steward	Time Period	Numerator	Denominator[a]	Data Sources	Analytic Method
							Set national median as benchmark
	Follow-Up After Emergency Department Visit for Mental Illness (FUM-AD) (CMS #17-2).	NCQA	Yearly	Number of ED visits for members with a principal diagnosis of mental illness or intentional self-harm and who had a follow-up visit for mental illness within: • 30 days • 7 days	Number of ED visits for members with a principal diagnosis of mental illness or intentional self-harm	Claims/encounters	Descriptive time series; pre-post one-way ANCOVA comparing baseline average to post-demonstration average, controlling for demographic subgroups Also compare to CMS Medicaid Adult Core Set national median as benchmark

AIM THREE: Improve outcomes for members using SUD services and maintain costs.

Research question	Measure	Measure Steward	Time Period	Numerator	Denominator[a]	Data Sources	Analytic Method
Primary Driver: Reduction in overdose deaths, particularly those due to opioids. G3							
Hypothesis 1: The demonstration will implement comprehensive treatment and prevention strategies to address opioid abuse and OUD as well as recruit and train more providers to provide MAT, resulting in a reduction in overdose deaths.							
Research Question 1: Have comprehensive treatment and	Key informant reports on Implementation of opioid prescribing guidelines.	N/A	Cumulative for interim reporting period, and for summative	None	None	Key Informant interviews from MCEs and SUD providers; document review	Descriptive narrative, Thematic analysis

Research question	Measure	Measure Steward	Time Period	Numerator	Denominator[a]	Data Sources	Analytic Method
prevention strategies been			reporting period.				
implemented and is MAT more accessible? **(Process Question)**	Number/percent of State organizations who distribute naloxone.	Evaluator, with input from the agency collecting the data	Yearly	Number of State organizations who distribute naloxone.	Number of State organizations	HCPF	Descriptive statistics (count) or time series; pre-post chi square test of significance comparing baseline proportion to post-demonstration period proportion
	Number/percent of MAT providers at all LOCs (CMS #14).	Evaluator, with input from the agency collecting the data	Yearly	Number of Medicaid MAT providers at all LOCs.	Number of SUD providers at all LOCs (CMS #13) for percentage	HCPF	Descriptive time series; pre-post chi square test of significance comparing baseline proportion to post-demonstration period proportion
	Number/percent of providers using the PDMPs.	Evaluator, with input from the agency collecting the data	Yearly	Number of Medicaid providers using PDMPs.	Number of Medicaid Providers	HCPF	Descriptive time series; pre-post chi square test of significance comparing baseline proportion to post-demonstration period proportion
Research question 2: Have comprehensive treatment and prevention strategies been	Use of opioids at high dosage in persons without cancer (OHD-AD) (CMS#18).	PQA	Yearly	Number of members in the denominator who received prescriptions for opioids with an average daily	Number of members with at least two opioid prescriptions with at least 15 days' supply. Members with a	Claims/encounters	Descriptive time series; pre-post chi square test of significance comparing baseline proportion to post-demonstration period proportion

Research question	Measure	Measure Steward	Time Period	Numerator	Denominator[a]	Data Sources	Analytic Method
effective in addressing opioid abuse and OUD?				dosage greater than or equal to 90 MMEs over a period of 90 days or more.	cancer diagnosis, sickle cell disease diagnosis, or in hospice are excluded.		Also compare to CMS Medicaid Adult Core Set national median as benchmark
	Concurrent use of opioids and benzodiazepines (COB-AD) (CMS#21).	PQA	Yearly	Number of members in the denominator with concurrent use of prescription opioids and benzodiazepines.	Number of members with at least two opioid prescriptions with at least 15 days' supply. Members with a cancer diagnosis, sickle cell disease diagnosis, or in hospice are excluded.	Claims/encounters	Descriptive time series; pre-post chi square test of significance comparing baseline proportion to post-demonstration period proportion Also compare to CMS Medicaid Adult Core Set national median as benchmark
Research question 3: Did comprehensive treatment and prevention strategies correspond to a reduction in overdose deaths and activities that support	Overdose Deaths (rate) (CMS#27)	Evaluator, with input from the agency collecting the data	Yearly	Number of Medicaid members with overdose as cause of death.	All Medicaid members	State data on cause of death	Descriptive time series (data ID's Medicaid members? Possible ITS); pre-post chi square test of significance comparing baseline proportion to post-demonstration period proportion Also compare to National Center for Health Statistics

Research question	Measure	Measure Steward	Time Period	Numerator	Denominator[a]	Data Sources	Analytic Method
overdose death reduction?							national drug overdose death rate as benchmark
Primary Driver: Reduced readmissions to the same or higher level of care where readmission is preventable or medically inappropriate for OUD and other SUD. G5							
Hypothesis 2: The demonstration will lead to widespread use of Evidence-based SUD specific Patient Placement Criteria resulting in reduced readmissions to the same or higher level of care where readmission is preventable or medically inappropriate for OUD and other SUD. M2							
Research question 1: Were utilization management policies and procedures, based upon patient placement criteria, fully implemented?	MCE development of utilization management policies and procedures and State review of utilization management policies and procedures. Internal monitoring of benefit by Initial Monitoring Team.	N/A	Cumulative for interim reporting period, and for summative reporting period.	None	None	Key informant interviews from MCEs and State reviewers Internal monitoring team	Descriptive narrative and thematic analysis
Research question 2: Did readmissions to the same or higher level of care, where readmission is preventable or medically inappropriate for OUD and	Readmissions Among Beneficiaries with SUD (CMS #25).	CMS	Yearly	Acute hospital admissions from the denominator with at least one acute readmission for any diagnosis within 30 days of discharge.	Acute hospital admissions for members with SUD diagnosis	Claims/encounters	Descriptive time series; pre-post chi square test of significance comparing baseline proportion to post-demonstration period proportion

Research question	Measure	Measure Steward	Time Period	Numerator	Denominator[a]	Data Sources	Analytic Method
other SUD, decrease?							
Primary Driver: Reduced utilization of EDs and inpatient hospital settings for OUD and other SUD treatment where the utilization is preventable or medically inappropriate through improved access to other continuum of care services. G4							
Hypothesis 3: The Demonstration will lead to widespread use of Evidence-based SUD specific Patient Placement Criteria resulting in reduced utilization of EDs and inpatient hospital settings for OUD and other SUD treatment where the utilization is preventable or medically inappropriate. M2							
Research Question 1: Did ED utilization decrease after implementation of utilization management?	ED Utilization for SUD per 1,000 Medicaid Beneficiaries (CMS #23).	CMS	Monthly	Number of ED visits for SUD.	All Medicaid members	Claims/encounters	ITS; controlling for demographic subgroups
Research Question 2: Did inpatient stays decrease after implementation of utilization management?	Inpatient Stays for SUD per 1,000 Medicaid Beneficiaries (CMS #24).	CMS	Monthly	Number of inpatient stays for SUD.	All Medicaid members	Claims/encounters Include OBH data in numerator for baseline years	ITS; controlling for demographic subgroups
Hypothesis 4: The demonstration will improve outcomes for members using SUD services with similar or lower service costs.							
Research Question 1: Have increasing trends in total cost of care	SUD Spending (CMS #28)	CMS	Yearly	The sum of all Medicaid spending on SUD treatment services	None	Claims/encounters Use provider paid amounts	Descriptive time series

Research question	Measure	Measure Steward	Time Period	Numerator	Denominator[a]	Data Sources	Analytic Method
been slowed for individuals with SUD diagnoses?	SUD Spending within IMDs (CMS #29).	CMS	Yearly	The sum of all Medicaid spending on inpatient/ residential treatment for SUD provided within IMDs.	None	Claims/encounters Use provider paid amounts	Descriptive time series
	Per Capita SUD Spending (CMS #30)	CMS	Yearly	The sum of all Medicaid spending on SUD treatment services (CMS #28).	Members with a SUD diagnosis (CMS #4)	Claims/encounters Use provider paid amounts	Descriptive time series; pre-post one-way ANCOVA comparing baseline average to post-demonstration average, controlling for demographic subgroups
	Per Capital SUD Spending within IMDs (CMS #31)	CMS	Yearly	The sum of all Medicaid spending on inpatient/ residential treatment for SUD provided within IMDs (CMS #29).	Number of members with a claim for inpatient/ residential treatment for SUD in an IMD	Claims/encounters Use provider paid amounts	Descriptive time series; pre-post one-way ANCOVA comparing baseline average to post-demonstration average, controlling for demographic subgroups
	Total Cost PMPM	CMS SUD Evaluation Design Guidance, Appendix C	Quarterly	The sum of all Medicaid spending (Inpatient, Outpatient, Pharmacy, Long Term Care,	Member months per quarter for members with a SUD diagnosis	Claims/encounters Use provider paid amounts	ITS; controlling for demographic subgroups

Research question	Measure	Measure Steward	Time Period	Numerator	Denominator[a]	Data Sources	Analytic Method
				Capitation payments, Administrative Costs, Federal Costs) for members with a SUD diagnosis		CMS #64 for Federal Costs	
	SUD Cost Drivers - Total SUD Spending PMPM	CMS SUD Evaluation Design Guidance, Appendix C	Quarterly	The sum of all Medicaid spending on SUD treatment services (CMS #28).	Member months per quarter for members with a SUD diagnosis	Claims/encounters Use provider paid amounts	ITS; controlling for demographic subgroups
	SUD Cost Drivers - IMD SUD Spending PMPM	CMS SUD Evaluation Design Guidance, Appendix C	Quarterly	The sum of all Medicaid spending on SUD treatment services within an IMD (CMS #29).	Member months per quarter for members with a SUD diagnosis	Claims/encounters Use provider paid amounts	Descriptive time series; pre-post one-way ANCOVA comparing baseline average to post-demonstration average, controlling for demographic subgroups
	SUD Cost Drivers - Non-IMD SUD Spending PMPM	CMS SUD Evaluation Design Guidance, Appendix C	Quarterly	The sum of all Medicaid spending on SUD treatment services not within an IMD	Member months per quarter for members with a SUD diagnosis	Claims/encounters Use provider paid amounts	ITS; controlling for demographic subgroups
	SUD Cost Drivers - Non-SUD Spending PMPM	CMS SUD Evaluation Design	Quarterly	The sum of all Medicaid spending on non-SUD treatment	Member months per quarter for members with a SUD diagnosis	Claims/encounters Use provider paid amounts	ITS; controlling for demographic subgroups

Research question	Measure	Measure Steward	Time Period	Numerator	Denominator[a]	Data Sources	Analytic Method
		Guidance, Appendix C		for members with a SUD diagnosis			
	Source of treatment cost drivers for members with SUD – Inpatient services PMPM	CMS SUD Evaluation Design Guidance, Appendix C	Quarterly	The sum of all Medicaid spending on inpatient treatment for members with a SUD diagnosis	Member months per quarter for members with a SUD diagnosis (CMS #4)	Claims/encounters Use provider paid amounts	ITS; controlling for demographic subgroups
	Source of treatment cost drivers for members with SUD – Emergency Department services PMPM	CMS SUD Evaluation Design Guidance, Appendix C	Quarterly	The sum of all Medicaid spending on emergency department services for members with a SUD diagnosis	Member months per quarter for members with a SUD diagnosis (CMS #4)	Claims/encounters Use provider paid amounts	ITS; controlling for demographic subgroups
	Source of treatment cost drivers for members with SUD – non-ED Outpatient services PMPM	CMS SUD Evaluation Design Guidance, Appendix C	Quarterly	The sum of all Medicaid spending on non-ED Outpatient services for members with a SUD diagnosis	Member months per quarter for members with a SUD diagnosis (CMS #4)	Claims/encounters Use provider paid amounts	ITS; controlling for demographic subgroups
	Source of treatment cost drivers for members with SUD – Pharmacy PMPM	CMS SUD Evaluation Design Guidance, Appendix C	Quarterly	The sum of all Medicaid spending on Pharmacy for members with a SUD diagnosis	Member months per quarter for members with a SUD diagnosis (CMS #4)	Claims/encounters Use provider paid amounts	ITS; controlling for demographic subgroups

Research question	Measure	Measure Steward	Time Period	Numerator	Denominator[a]	Data Sources	Analytic Method
	Source of treatment cost drivers for members with SUD – Long Term Care PMPM	CMS SUD Evaluation Design Guidance, Appendix C	Quarterly	The sum of all Medicaid spending on Long Term Care for members with a SUD diagnosis	Member months per quarter for members with a SUD diagnosis (CMS #4)	Claims/encounters Use provider paid amounts	ITS; controlling for demographic subgroups

Analytic Methods

Multiple analytic techniques will be used, depending on the type of data for the measure and the use of the measure in the evaluation design (e.g., process measure versus outcome measures). Descriptive, content analysis will be used to present data related to process evaluation measures gathered from document reviews, key informant interviews, etc., as discussed previously. Qualitative analysis software

(R Qualitative, ATLAS, or similar) will be used to organize documentation, including key informant interview transcripts. Analysis will identify common themes across interviews and documents. In some cases, checklists may be used to analyze documentation (e.g., licensure) for compliance with standards. These data will be summarized in order to describe the activities undertaken for each project milestone, including highlighting specific successes and challenges.

Descriptive statistics including frequency distributions and time series (presentation of rates over time) will be used for quantitative process measures in order to describe the output of specific waiver activities. These analysis techniques will also be used for some short-term outcome measures in cases where the role of the measure is to describe changes in the population, but not to show specific effects of the waiver demonstration. Where pre-demonstration and post-demonstration rates are comparable, pre-post distributional test will be made to quantify statistical differences in process measures before and after the demonstration.

An ITS will be used to describe the effects of waiver implementation in metrics that are measured on a monthly or quarterly basis. Specific outcome measure(s) will be collected for multiple time periods both before and after start of intervention. Segmented regression analysis will be used to measure statistically the changes in level and slope in the post-intervention period (after the waiver) compared to the pre-intervention period (before the waiver). The ITS design will be dependent on being able to use similar historical data on specific outcome measures collected from OBH based on inpatient and residential SUD services provided prior to the demonstration and on the ability to receive data needed to produce historical data regarding outpatient

SUD services, ED use, and hospitalizations using previous encounter data, (see Methodology Limitation section for more information). The ITS design uses historical data to forecast the "counterfactual" of the evaluation, that is to say, what would happen if the demonstration did not occur. We propose using basic time series linear modeling to forecast these "counterfactual" rates for three years following the demonstration implementation.[13] The more historical data available, the better these predictions will be. ITS models are commonly used in situations where a contemporary comparison group is not available.[14] The State has considered options for a contemporary comparison group. Since the demonstration will target all adult non-expansion and expansion Medicaid members in need of SUD services, the only viable groups for comparison within the State would be those covered with private insurance, which would include a very different demographic population.

For this demonstration, establishing the counterfactual is somewhat nuanced. The driver diagram and evaluation hypotheses assume that demonstration activities will have overall positive impacts on outcome measures. The figure below illustrates an ITS design that uses basic regression forecasting to establish the counterfactual — this is represented by the grey line in the graphic. The counterfactual is based on historical data (the blue line). It uses time series averaging (trend smoothing) and linear regression to create a predicted trend line (shown below as the grey line). The orange line in the graph is the (sample) actual observed data. Segmented regression analysis will be used to measure statistically the changes in level and slope in the post-intervention period compared to the predicted trend (see "effect" in the graph below).

$$Y_t = \beta_0 + \beta_1 T + \beta_2 X_t + \beta_3 T X_t$$

13 E Kontopantelis (2015). Regression based quasi-experimental approach when randomization is not an option: interrupted time series analysis. British Medical Journal (BMJ). Available at: https://www.bmj.com/content/350/bmj.h2750.

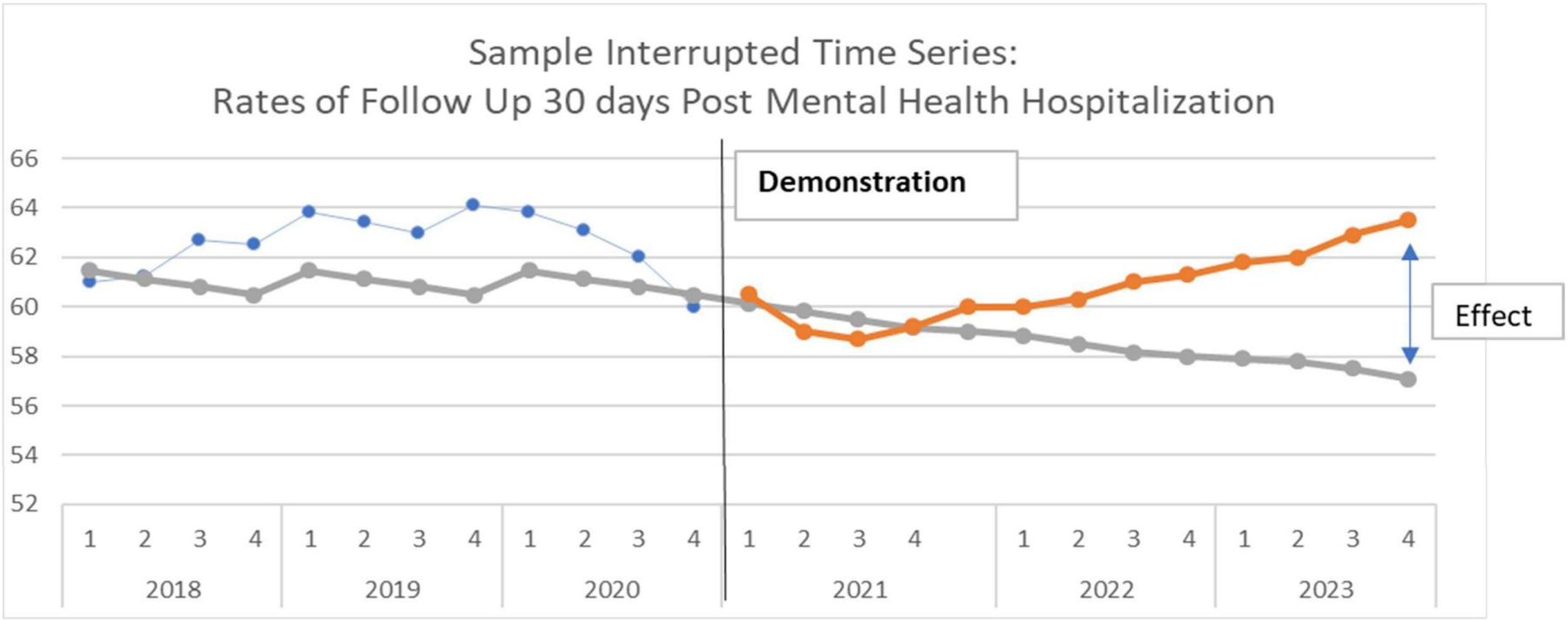
14 Ibid.

Where $\beta 0$ represents the baseline observation, $\beta 1$ is the change in the measure associated with a time unit (quarter or year) increase (representing the underlying pre-intervention trend), $\beta 2$ is the level change following the intervention and $\beta 3$ is the slope change following the intervention (using the interaction between time and intervention: TXt).[15]

This can be represented graphically as follows.

15 Bernal JL, Cummins S, Gasparrini A. "Interrupted time series regression for the evaluation of public health interventions: a tutorial" (2017 Feb.). International Journal of Epidemiology 46(1): 348-355.

Figure 1: (SAMPLE data only) Rates of Follow Up Post Mental Health Hospitalization



Pre-demonstration data from January 1, 2018, to December 31, 2020, will be calculated using the monthly, quarterly, or annual period of time as specified in the CMS technical specifications for each metric. Trends in these data for each measure will be used to predict the counterfactual (what would have happened without the demonstration). Outcomes measures will be calculated beginning January 1, 2021, through the end of the waiver demonstration project (December 31, 2025). A discussion of including confounding variables (e.g., COVID-19, other SUD efforts) is included in the next section.

Quantitative outcome measures with yearly measurement periods that are expressed as averages or proportions will be analyzed with pre-post tests and may be compared with national benchmark statistics from the National Survey on Drug Use and Health, the CMS Medicaid Adult Core Set, and the National Center for Health Statistics. While two or three pre-demonstration measurement periods for yearly metrics may not be enough information to establish a trend for the ITS analysis, pre-post analyses may reveal differences in outcomes before and after the demonstration. One-way analysis of covariance, or t-tests will be used to compare pre-demonstration averages with post-demonstration averages, and chi-square tests will be used to compare proportions.

In the case that Mercer is not able to obtain detailed encounter data from OBH, or data validation suggests that the data should not be used, benchmark comparisons to national data will also be implemented for a limited number of metrics, as described in the preceding research design table.

Qualitative analysis will utilize data collected from three main sources: 1) key informant interviews with State staff working on implementation efforts, MCE representatives, and providers, 2) key process documentation (e.g., policy and procedure manuals, guidance documents), and 3) MCE and provider contracts. Informant sampling will be largely based on convenience/snowball sampling where key stakeholders provide initial lists of potential interviewees, based on their perspective on demonstration implementation activities. Meeting minutes listing attendees will also be reviewed to identify potential interviewees. MCE staff and provider staff will also be included. Because this likely will be a large number of people, the independent evaluator will work with the State to determine whether to conduct focus groups with these populations, or to engage in a strategic stratified sampling process. The latter will ensure representation from each MCE, and from providers stratified by geography/location, size, and services provided. Document reviews will include meeting minutes, policy and procedure documents, MCE and provider contracts, and others identified during the qualitative analysis process. Themes will be identified by multiple coders who review documents, identify initial themes, then collaborate in the creation of a central list of primary and secondary themes.

Key informant interviews and document reviews will occur at four critical junctures: initially, prior to the mid-point assessment, prior to the interim evaluation report being written and prior to the final summative evaluation report being finalized. Specifically, the initial qualitative analysis will occur May 2022–July 2022. The second qualitative analysis will occur May 2023–July 2023. The third qualitative analysis will occur March 2024–May 2024. The final qualitative analysis will occur March 2027–May 2027.

4

Methodological Limitations

There are two primary limitations to the evaluation methodology presented here. The first involves issues of data quality and data sources that either: 1) are not sufficient to conduct the analysis proposed here (e.g., not enough historical data for needed prior time periods), or 2) contain errors. The second limitation is related to the design itself because this evaluation plan relies heavily on descriptive, time series analysis, and qualitative data, this evaluation will describe what happened after the demonstration was implemented, but it will be difficult to isolate why changes occurred. In other words, it will be difficult to directly attribute changes after waiver implementation to the activities undertaken as part of the waiver. Each of these limitations is discussed in greater detail within this section.

Some of the metrics being computed by Mercer will be calculated for the first time. Both Mercer and the Department are working closely with OBH and IBM to request and test extracts of pre-demonstration data. While it is unclear at this time the degree to which it will be possible to generate historical data needed to forecast the slope of the "counterfactual" trend line (what would have happened without the demonstration), HCPF is confident the independent evaluator will have access to this historical data in the near future. This historical data is an important component of the ITS design, but also supports the descriptive time series analysis. In particular, there will be a limitation in estimating the slope of what the trend line would be without the demonstration if we do not have data to model what would have happened without implementation.

In addition to any issues with historical data, the Department's data systems may have current issues that contribute to data errors. Combining data from separate sources can prove challenging, and Mercer is working through the process carefully to minimize any data errors, including performing various data validations and duplicate record checks.

Behavioral health data for the evaluation is received in separate files for the various MCEs. There are currently eight MCEs and an additional five historical RAEs. Mercer has noted several data issues so far. For example, some of the MCEs reuse claim numbers, which impacts claim adjustment logic. In addition, some fields with the same name are populated with different field types, so special care is required when combining the data from different MCEs, so data is not inadvertently dropped. Mercer is currently working through adjustment logic for the behavioral health data, including creating and testing unique claim identifiers.

There have also been some import issues with the MMIS data due to misplaced carriage returns, which will be monitored going forward. Adjustment logic will also be applied to the MMIS data, but at this time looks to be a more standardized process.

After the behavioral health data and the MMIS data are received, imported, adjusted, and validated, they will be combined with the available pre-demonstration OBH data, which will be subject to similar processes, to comprise the base data for measure calculation. Further, the current system has a runout of six months, and will need to take into account timing around pulling data to calculate numerators and denominators for the measures.

While the ITS design is the strongest available research method, in the absence of a randomized trial or matched control group, there are some threats to the validity of results in the design.[16] The primary threat is that of history, or other changes over time happening during the waiver period. This ITS design is only valid to the extent that the waiver program was the only thing that changed during the evaluation period. Other changes to policies or programs could affect the outcomes being measured under the demonstration. We will attempt to control this threat by considering other policy and program changes happening concurrent to the waiver period interventions. At a minimum, we will use qualitative methods, in the form of key informant interviews, to identify other initiatives or events may have occurred during the demonstration that might influence demonstration effects. We will conduct a qualitative assessment of these likely impacts and will use time series analysis to show how trends may have changed at these critical time periods. In order to isolate the effects of these efforts, we will also conduct additional iterations of the ITS. Using identified critical time points as additional variables, we will test whether other major efforts had a statistically significant impact in the post-demonstration waiver trend. The analysis will note the dates of other changes and analyze the degree to which the slope of the trend line changes after implementation of other interventions are made.

The demonstration waiver application lists three main efforts that likely impact SUD services in the State: Implementation of the ACC program (Phase 2) in July 2018, the STR, which began in May 2017 and the SOR grant, which extended the STR grant activities through 2020.

Because most of these activities took place during the pre-demonstration period, their impacts will be reflected in the historical data (January 2018–December 2020) and will therefore impact the predicted trend line. It is possible that effects of these efforts may mute the

hypothesized impacts of the demonstration. The ACC continues into the demonstration period, so accounting for this in the pre-demonstration predicted trend is reasonable, as any measurable effects should be due to the demonstration. The STR and SOR, which ended prior to the demonstration and included expanding MAT and increasing availability of naloxone, would likely have the largest impact on the predicted trend lines for metrics

16 Penfold RB, Zhang F. “Use of interrupted time series analysis in evaluating heath care quality improvements.” Academic Pediatrics, 2013 Nov-Dec, 13(6Suppl): S38-44.

measuring MAT usage and opioid deaths. These metrics may show only muted or no detectable demonstration impacts. We will discuss the impact of the STR and SOR in the interpretation of relevant metrics in the evaluation reports.

The impact of COVID-19 most likely affected the pre-demonstration period, and we anticipate a statically significant impact on most metrics. Therefore, in the initial forecasting within the ITS model, the independent evaluator will include a COVID-19 covariant for the start of the pandemic in the forecast model. Essentially, the ITS for this evaluation will create two counterfactual scenarios using historical data. We will create a "without" COVID-19 forecast using historical data only prior to March of 2020 as one potential counterfactual to compare against actual trends. If we can establish sufficient data points between March 2020 and the waiver start date of January 2021, we can estimate the COVID-19 impact on the forecast. We will also create a forecast with data through the pre-demonstration period (up to January 2021) that includes data during the times COVID-19 was prevalent in the State. As long as COVID-19 remains prevalent during the demonstration period, we anticipate that using the "with COVID-19" model as the counterfactual will be more accurate. Additional covariate time periods can be added to the model if there are significant shifts in either COVID-19 prevalence numbers or policy shifts (e.g., new stay at home orders) in the State. We will also qualitatively explore how COVID-19 impacted the implementation of the waiver, based on data from key informant interviews.

A related threat to the validity of this evaluation is external (history). Because we have not identified a comparison group (a group of Medicaid members who would be eligible for the waiver interventions but who will not receive them and/or for whom data will not be collected), it will be difficult to attribute causality. It will be less certain whether the changes observed in outcomes are due entirely to the waiver interventions, rather than some external, outside cause (including other program and policy changes described earlier). However, the ITS design controls for this threat to some degree, by linking what would have likely happened (e.g., forecasting the trajectory of counts and rates over time) without any program changes and comparing this forecast to actual changes over time. To strengthen this design as much as possible, as many data points will be collected as possible across multiple years preceding waiver changes. This will allow for adjustment of seasonal or other, cyclical variations in the data. Additionally, the design will examine multiple change points and identifying key areas of major program and policy adjustments, so that with each major milestone accomplishment, corresponding changes to metrics can be observed

The ITS analysis will also include a sensitivity analysis to determine the degree to which specific ITS assumptions impact the analysis. Specifically, the degree to which the assumption that trends in time are linear versus non-linear will be addressed. Additionally, this model assumes that changes will occur directly after the intervention. However, it is possible that for some outcomes, there will be a lag between the start of the waiver and observed outcomes.

We will also attempt to limit this threat to validity by triangulating our data. Encounter data trends across multiple time periods will be compared to trends happening at other points in time (other large policy or program shifts that might influence the slope of the trend in addition to the demonstration). Also, key informant interviews will be used to inform the quantitative findings and explain the degree to which individuals are seeing demonstration impacts. We will also attempt to seek out national and other State data for benchmarking, that will allow us to determine whether Colorado is performing in a similar fashion to other demonstration states, non-demonstration states, or national benchmarks overall.

According to the literature on ITS analysis, estimating the level and slope parameters requires a minimum of eight observations before and after implementation in order to have sufficient power to estimate the regression coefficients.[17] Evaluators will need to work closely with the Department, OBH, and their respective data teams to gather as many data points as possible and discuss limitations within the evaluation findings if enough points cannot be collected.

It should also be noted that ITS cannot be used to make inferences about any one individual's outcomes as a result of the waiver. Conclusions can be drawn about changes to population rates, in aggregate, but not speak to the likelihood of any individual Medicaid member having positive outcomes as a result of the waiver.

Qualitative data, while useful in confirming quantitative data and providing rich detail, can be compromised by individual biases or perceptions. Key informant interviews, for example, represent a needed perspective around context for demonstration activities and outcomes. However, individuals may be limited in their insight or understanding of specific programmatic components, meaning that the data reflects perceptions, rather than objective program realities. The evaluation will work to address these limitations by collecting data from a variety of different perspectives to help validate individuals' reports. In addition, standardized data collection protocols will be used in interviews and interviewers will be trained to avoid "leading" the interviewee or inappropriately biasing the interview. It will also utilize multiple "coders" to analyze data and will create a structured analysis framework, based on research questions that analysts will use to organize the data and to check interpretations across analysts. Finally, results will be reviewed with stakeholders to confirm findings.

17 Ibid.

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Attachments

As part of the Standard Terms and Conditions (STCs), as set forth by CMS, the demonstration project is required to arrange with an independent party to conduct an evaluation of the SUD demonstration to ensure that the necessary data is collected at the level of detail needed to research the approved hypotheses. Mercer, through a request for proposal (RFP) process, contracts to provide technical assistance to HCPF.

Mercer was selected as the technical assistance vendor. One of the scopes of work in the technical assistance work plan is the waiver evaluation. Mercer will develop the evaluation design, calculate the results of the study, evaluate the results for conclusions, and write the Interim and Summative Evaluation Reports.

Mercer has over 25 years of experience assisting state governments with the design, implementation, and evaluation of publicly sponsored health care programs. Mercer currently has over 25 states under contract and has worked with over 35 different states in total. They have assisted states like Arizona, Connecticut, Missouri, and New Jersey in performing independent evaluations of their Medicaid programs; many of which include 1115 Demonstration waiver evaluation experience. Given their extensive experience, the Mercer team is well equipped to work effectively as the external evaluator for the demonstration project. The table below includes contact information for the lead coordinators from Mercer for the evaluation:

NAME	POSITION	EMAIL ADDRESS
Kate Goergen	Engagement Leader	kate.goergen@mercer.com
Tonya Aultman-Bettridge, PhD	Evaluation Lead	taultman-bettridge@triwestgroup.net
Jeanie Aspiras, MBA	Program Manager	jeanie.aspiras@mercer.com
Carissa Cramer	Project Manager	carissa.cramer@mercer.com
Brenda Jenney, PhD	Statistician	brenda.jenney@mercer.com
Brenda Jackson, MPP	Policy and Operations Sector	brenda.jackson@mercer.com

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Attachment A

Conflict of Interest Statement

Colorado (HCPF) has taken steps to ensure that Mercer is free of any conflict of interest and will remain free from any such conflicts during the contract term. HCPF considers it a conflict if Mercer currently 1) provides services to any MSOs or health care provider doing business in Colorado under the Health First Colorado program; or 2) provides direct services to individuals in HCPF or OBH-administered programs included within the scope of the technical assistance contract. If HCPF discovers a conflict during the contract term, HCPF may terminate the contract pursuant to the provisions in the contract.

Mercer's Government specialty practice does not have any conflicts of interest, such as providing services to any MSOs or health care providers doing business in Colorado under the Health First Colorado program or to providing direct services to individual recipients. One of the byproducts of being a nationally operated group dedicated to the public sector is the ability to identify and avoid potential conflicts of interest with our firm's multitude of clients. To accomplish this, market space lines have been agreed to by our senior leadership. Mercer's Government group is the designated primary operating group in the Medicaid space.

Before signing a contract to work in the Medicaid market, either at the state-level or otherwise, we require any Mercer entity to discuss the potential work with Mercer's Government group. If there is a potential conflict (i.e., work for a Medicaid health plan or provider), the engagement is not accepted. If there is a potential for a perceived conflict of interest, Mercer's Government group will ask our state client if they approve of this engagement, and we develop appropriate safeguards such as keeping separate teams, restricting access to files, and establish process firewalls to avoid the perception of any conflict of interest. If our client does not approve, the engagement will not be accepted. Mercer has collectively turned down a multitude of potential assignments over the years to avoid a conflict of interest.

Given that Mercer is acting as both technical assistance provider and independent evaluator for this project, HCPF and Mercer have implemented measures to ensure there is no perceived conflicts of interest. This contract was awarded following a competitive bidding process that complied with all Colorado State laws, the Mercer evaluation team is functionally and physically separate from the technical assistance team, and the contract does not include any performance incentives that would contribute to a perception of conflicted interests between technical assistance services and the independence of the evaluation process. As an additional firewall, the evaluation statistical analyses will be conducted by a subcontractor that has not had any interaction with the technical assistance team, using data that has been reviewed and accepted by CMS (through monitoring protocol submissions).

In regards to Mercer's proposed subcontractors, all have assured Mercer there will be no conflicts and that they will take any steps required by Mercer or HCPF to mitigate any perceived conflict of interest. To the extent that we need to implement a conflict mitigation plan with any of our valued subcontractors, we will do so.

Mercer, through our contract with HCPF, has assured that it presently has no interest and will not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of its services. Mercer has further assured that in the performance of this contract, it will not knowingly employ any person having such interest. Mercer additionally certified that no member of Mercer's Board or any of its officers or directors has such an adverse interest.

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Attachment B

Evaluation Budget

	DY 1	DY2	DY3	DY4	DY5	Final Evaluation	Total Evaluation Cost
	2021	2022	2023	2024	2025	6/30/2027	
State of Colorado							
HCPF & OBH	$100,000*	$50,000**	$50,000	$50,000	$50,000	$50,000	$350,000

*Estimates based on 1) Demonstration Year 1 (DY1) data infrastructure and data sharing protocol build between Departments and vendor; and 2) staff review of DY1 deliverables.

**Estimates for DY2–DY5 based on State of Colorado review of annual, ongoing deliverables.

Evaluation Budget — Independent Evaluator/Contractor — Mercer Hours					
	Senior Consultant	Junior Consultant	Consultant	Project Management	Total Hours
Evaluation Activities					
Develop and draft Evaluation Design	288	72	--	30	390
Revise drafted Evaluation Design	28	7	--	--	35
Draft Interim Evaluation report	72	18	--	26	116
Finalize Interim Evaluation report	40	10	--	--	50
Draft Summative Evaluation report	92	23	--	26	141
Finalize Summative Evaluation report	40	10	--	--	50

Evaluation Budget — Independent Evaluator/Contractor — Mercer Hours					
	Senior Consultant	Junior Consultant	Consultant	Project Management	Total Hours
Data Activities					
Load, validate, and scrub raw data — Evaluation measures for Annual reports.	--	250	250	10	510
Load, validate, and scrub raw data — Evaluation measures for Interim and Final Evaluation report	148	148	35	--	331
File mapping to standardize file format — Evaluation measures for Annual reports.	100	195	100	10	405
File mapping to standardize file format — Evaluation measures for Interim and Final Evaluation report	--	128	128	10	266
Initial programming/validation of code for measure development — Evaluation measures (37)	88	10	88	--	186
Run and validate programming/coding for each measure, generate the measures — Evaluation measures for annual reports. (10 measures; 40 hours/year; 10 PM)	--	100	100	10	210
Statistical measures for the evaluation: Interim and Final report (300 hours/report)	100	250	250	10	610
Final Total:					**3,300**

Evaluation Budget — Independent Evaluator/Contractor — Mercer Costs									
	FY1 – DY1	FY2 – DY1, 2	FY3 – DY2, 3	FY4 – DY3, 4	FY5 – DY4, 5	FY6 – DY5	FY7 – DY6	FY8	Total Cost
Evaluation Activities									
Develop and draft Evaluation Design	$115,140	--	--	--	--	--	--	--	$ 115,140
Revise drafted Evaluation Design	--	$10,465	--	--	--	--	--	--	$ 10,465
Draft Interim Evaluation report	--	--	--	--	$33,410	--	--	--	$ 33,410
Finalize Interim Evaluation report	--	--	--	--	--	$14,950	--	--	$ 14,950
Draft Summative Evaluation report	--	--	--	--	--	--	$40,885	--	$ 40,885
Finalize Summative Evaluation report	--	--	--	--	--	--	--	$14,950	$ 14,950
Data Activities									
Load, validate, and scrub raw data — Evaluation measures for Annual reports.	--	$27,750	$27,750	$27,750	$27,750	$27,750	--	--	$ 138,750
Load, validate, and scrub raw data — Evaluation measures for Interim and Final Evaluation report (190 hours initial	--	$52,975	--	$30,263	--	--	$30,263	--	$ 113,500
File mapping to standardize file format — Evaluation	--	$44,163	$17,650	$17,650	$17,650	$17,650	--	--	$ 114,763

Evaluation Budget — Independent Evaluator/Contractor — Mercer Costs									
	FY1 – DY1	FY2 – DY1, 2	FY3 – DY2, 3	FY4 – DY3, 4	FY5 – DY4, 5	FY6 – DY5	FY7 – DY6	FY8	Total Cost
measures for Annual reports.									
File mapping to standardize file format — Evaluation measures for Interim and Final Evaluation report	--	--	--	$34,694	--	$34,694	--	--	$ 69,388
Initial programming/validation of code for measure development — Evaluation measures (37)	--	$172,744	--	--	--	--	--	--	$ 172,744
Run and validate programming/coding for each measure, generate the measures — Evaluation measures for Annual reports.	--	$12,600	$12,600	$12,600	$12,600	$12,600	--	--	$ 63,000
Statistical measures for the evaluation: Interim and Final report	--	--	--	$78,250	--	$78,250	--	--	
Final Total:									**$ 1,058,444**

8

Attachment C

Potential Timeline and Major Deliverables

The table below highlights key evaluation milestones and activities for the waiver and the dates for completion.

Deliverable	STC Reference	Date
Submit evaluation design plan to CMS	38	October 1, 2021
Final evaluation design due 60 days after comments received from CMS	38	February 4, 2022
Mid-point assessment due	29	August 30, 2023
Draft Interim Report due	40C	June 30, 2024 (or with renewal application)
Final Interim Report due 60 days after CMS comments received	40D	60 days after comments received from CMS
Draft Summative Evaluation Report due 18 months following demonstration	41	June 30, 2027
Final Summative Evaluation Report due 60 days after CMS comments received	41A	60 days after comments received from CMS

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State's Response to Interim Evaluation

There have been many intensive efforts across the State in the past several years, including the 1115 Substance Used Disorder (SUD) waiver, that have transformed behavioral health services. The Interim Evaluation conducted by the independent evaluator, TriWest, identified some recommendations for areas of improvement for Colorado. Recommendations noted in the Interim Evaluation are similar to the recommendations from the Midpoint Assessment submitted to Centers for Medicare & Medicaid Services (CMS) in August 2023. Overall, significant progress has been made, and the State continues to work toward achieving evaluation activities.

Key findings from the Interim Evaluation include:

1. The State completed significant activities to ensure new levels of care were implemented
2. The State has seen increases in the number of members receiving opioid use disorder (OUD) and SUD services across levels of care
3. The State has seen growing readmission rates, decreasing engagement statistics, and a disproportionate percentage of the population receiving withdrawal management (WM) services relative to sustained SUD treatment
4. The State has seen modest increase in network adequacy and provider capacity

The Interim Evaluation outlines some opportunities for the State to strengthen the continuum of care that align with the recommendations in the report. These opportunities include:

1. Strengthening access to care across all levels
2. Improving retention in care
3. Improving care coordination and treatment level transitions
4. Improving follow-up after hospitalizations and emergency department (ED) use

The Department of Health Care Policy and Financing (HCPF) acknowledges these recommendations and has prepared the following responses:

- **Strengthening Access to Care Across all Levels and Retention in Care**

  Colorado continues to expand SUD services to ensure the State is providing the full SUD continuum of care. Effective July 1, 2024, Health First Colorado began coverage of American Society of Addiction Medicine (ASAM) level 2.5 Partial Hospitalization Program (PHP) services. This addition of ASAM level 2.5 completes the full ASAM continuum of SUD services in Colorado. PHP provides 20 hours or more of clinically intensive programming each week to support patients who are living with an SUD condition and an unstable medical and/or psychiatric condition in need of daily monitoring and management in a structured outpatient setting. The State is encouraging providers who are licensed and endorsed to deliver ASAM 2.5 PHP services

in Colorado to serve Medicaid members by contracting with one or more Managed Care Entities (MCEs) to begin providing services to members.

Colorado continues to further develop provider capacity in collaboration with other state agencies including the Behavioral Health Administration (BHA) and the Colorado Department of Public Health and Environment (CDPHE). Through American Rescue Plan Act (ARPA) grant funds, HCPF contracted with Human Services Research Institute (HSRI) to conduct a "Behavioral Health Network Gap Analysis" using administrative claims and enrollment data. The "Behavioral Health Network Gap Analysis" provided recommendations to enhance Health First Colorado network adequacy standards. One recommendation focused on strategies for increasing access to behavioral health services, specifically workforce support expansion, including provider training, consultation and support for programs, increased utilization of care teams and digital applications to support treatment services. The report also suggested looking at population specific efforts to reduce disparities in access. Colorado is taking a multiprong approach and working in collaboration with other agencies to help strengthen the behavioral health network and access to behavioral health services including SUD services. HCPF will continue to monitor network adequacy requirements for MCEs through quarterly reporting which includes both a narrative report and data file with details about the MCE's Primary Care Medical Provider network and Specialty Behavioral Health network capacities.

HCPF continues working to facilitate better aligned policies and procedures across MCEs to support the SUD provider experience when working across regions of the state to improve both overall treatment delivery and coordinating care through forums and workgroups. This area of improvement is also correlated to ED follow up. Through Senate Bill 22-177, Investments in Care Coordination Infrastructure, Colorado is building a care coordination infrastructure to improve treatment delivery and care coordination for members. This bill also includes use of a cloud-based platform to ensure providers that are not using electronic health records can actively participate in the care coordination process and infrastructure.

- **Improving Care Coordination and Treatment Level Transitions**

  The Interim Evaluation recommends Colorado adopt key strategies from a Colorado Health Institute report titled "Bridging the Gaps: Policy Recommendations to Implement a Cohesive Statewide Care Coordination Infrastructure". The report focuses on establishing a cohesive statewide care coordination framework and provides recommendations for BHA and other agencies.

  In collaboration with BHA, HCPF has begun efforts to implement requirements under Senate Bill 22-177, Investments in Care Coordination Infrastructure. Essential elements include defining care coordination services, enhancing infrastructure, setting care standards, establishing credentialing requirements, and developing effective payment and accountability models. HCPF continues to collaborate with BHA on the implementation of this legislation.

  Additionally, the Interim Evaluation emphasizes that MCEs should initiate performance improvement projects aimed at enhancing care coordination and transitions post-emergency department visits, hospitalizations. These transitions focused projects, in conjunction with wellness management strategy development, may improve patient

retention and reduce readmission rates. As part of Colorado's Accountable Care Collaborative (ACC) Phase III implementation, Colorado is implementing a new tiered care coordination approach to ensure that members with complex needs, including high utilizers and members with multiple diagnoses, receive levels of care coordination aligned to meet their needs. This includes standardized definitions for care coordination levels to ensure consistent and accountable transitions across care settings, particularly for members with complex needs. Integration of physical and behavioral health services is a priority, aiming for holistic care and improved health outcomes.

The ACC aims to empower regional entities to better address community needs and streamline care delivery. For Phase III, starting July 1, 2025, significant changes are proposed to tackle existing challenges and to integrate care coordination with health- related social needs and preventive services. The enhancement of care coordination and case management is pivotal for achieving quality and equitable outcomes. Key objectives include improving intervention quality, increasing awareness of care services, and ensuring equitable access.

Support for the care coordination infrastructure involves extensive training for behavioral health providers and collaborative efforts with BHA to align care management strategies across regions. The development of tools like the Social Health Information Exchange (SHIE) will facilitate connections to health improvement programs and local support services.

HCPF is working statewide on strengthening the healthcare system, enhancing care coordination, and improving overall health outcomes. HCPF is also committed to enhancing care coordination by building relationships with community-based organizations (CBOs) to better reach marginalized populations.

- **Improving Follow-Up after Hospitalizations and Emergency Department Use**

The Interim Evaluation reported that data from the first 2.5 years of the demonstration does not support the anticipated decrease in ED utilization for members with a primary SUD diagnosis. The State is also seeing that the follow up after ED visits is not increasing as anticipated. In efforts to address ED utilization, Colorado continues to work on increasing availability of community-based resources such as High Intensity Outpatient (HIOP) services, including PHP, and crisis services, including walk-in clinics and Mobile Crisis Response (MCR). As mentioned earlier, HCPF implemented coverage for PHP effective July 1, 2024. Colorado continues to engage with hospitals and the MCEs to discuss opportunities and barriers to reducing readmissions ED utilization in general. The State is also engaging with hospitals on discharge planning for SUD- related admissions. HCPF is incorporating discharge planning and follow up care coordination, as well as readmissions following ED admissions into performance measures for MCEs under Phase III of the ACC, planned for implementation on July 1, 2025. Colorado will continue to monitor the metrics for follow up care and ED utilization closely and will continue to collaborate with providers and other stakeholders to continue to develop community-based resources to better address member

needs more proactively in the community based setting when possible, though more robust screening and early intervention efforts.

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